OCCUPATIONAL FRAMEWORK

MSIC 2008 CODE C 120 MANUFACTURE OF KENAF/TOBACCO

JABATAN PEMBANGUNAN KEMAHIRAN

KEMENTERIAN SUMBER MANUSIA

Department of Skills Development

Ministry of Human Resources

First Printing 2018

Published in Malaysia by
Department of Skills Development (DSD)
Level 7-8, Block D4, Complex D
Federal Government Administrative Centre
62530 Putrajaya, Malaysia
http://www.dsd.gov.my

Printed by
Golden Global Network (SA0124636-K)
No. 11, Jalan Reko Sentral 2,
Taman Reko Sentral, 43000 Kajang, Selangor
Tel: 03-8740 3420 Faks: 03-8739 8249

Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

Occupational Framework
MSIC 2008 Code C 120 Manufacture of Kenaf/Tobacco
ISBN 978-967-0572-95-6

ABSTRACT

An Occupational Framework (OF) is the outcome of the analysis conducted in identifying the work scope of the occupational areas in terms of competencies. It is used to analyse skilled manpower competency requirements for the industry. The OF aims to provide an overall view of the industry's OS and identify skills gaps, critical job titles and Occupational Descriptions that would assist in further understanding the job requirements of the various occupations in the industry. *Jabatan Pembangunan Kemahiran* (JPK) or in English, the Department of Skills Development (DSD) is the custodian of this document, where the OF identified the suitable occupational areas which either require development of skills training programmes or the review and enhancement of existing skills training programmes. The OF for Manufacturing of Kenaf/Tobacco Procuct is based on the Malaysian Standards Industrial Classification 2008 (MSIC 2008) under Section C – Manufacturing, Division 12 – Manufacturing of Kenaf/Tobacco, Group 120 – Manufacturing of Kenaf/Tobacco Product. This document is divided into several chapters, the first chapters include standard definitions of terminology used in *Jabatan Pembangunan Kemahiran* (Department of Skills Development) skills training system and documentation, followed by the objectives, scope and justification of the OF development for the Kenaf/Tobacco Products Manufacturing Industry. Chapter 2 includes the industry overview highlighting the definition and scope of the industry, stakeholders, legislation, initiatives and industry & market intelligence of the industry. The third chapter explained the methodology used in the OF development such as qualitative analysis through brainstorming discussion sessions and industry surveys. Chapter 4 discussed the findings from the focus group discussion and industry survey conducted that be translated into the Occupational Structure, Occupational Description, Jobs in Demand, Skills in Demand and Emerging Skills. Lastly, Chapter 5 concluded the total number of job area identified is 9 with 102 job titles and 37 job titles identified as critical job titles and also recommended the NOSS or NCS that should be developed based on the jobs in demand identified in this OF and the skills in demand plus emerging skills that should be included in the NOSS and skills training curriculum under JPK.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATION

CBT	Competency Based Training
JPK	*Jabatan Pembangunan Kemahiran* (Department of Skills Development)
MOSQF	Malaysia Occupational Skills Qualification Framework
MQF	Malaysia Qualifications Framework
NCS	National Competency Standards
NOSS	National Occupational Skills Standard
OF	Occupational Framework
OD	Occupational Description
OS	Occupational Structure

CHAPTER 1: INTRODUCTION

1.1 Chapter Introduction

This chapter will explain the objectives, scope and justification for the development of the Occupational Framework for the Manufacture of Kenaf/Tobacco Products. The concept of the Occupational Framework and its function in skills training and curriculum development is also elaborated in this chapter.

There have been various National Occupational Skill Standard (NOSS) documents developed for the Kenaf and Tobacco Industry. However, a complete analysis on the Occupational Structure of the Kenaf and Tobacco Industry has not been undertaken before this. Therefore, in order to identify the overall structure and available career paths in the industry, the Occupational Framework must be done on the Kenaf and Tobacco Industry.

1.1.1 Research Background

The Department of Skills Development (DSD) has conducted previous research on the Kenaf and Tobacco Industry where the first project was the Occupational Job Structures for the Kenaf and Tobacco Industry Sector in the year 2009. However, there has not been specific research on the Occupational Structure of the industry based on the Malaysia Standard Industry Classification (MSIC) definition of the industry which is the Manufacture of Kenaf/Tobacco Products. It is defined in the MSIC under Section C, which is manufacturing and Division 12 which is Manufacture of Kenaf/Tobacco Products. In order to review the development of the Occupational Framework is in line with the development of the NOSS based on MSIC sections and divisions, therefore this research aims to define the industry as specified in the MSIC based on qualitative research on its Occupational Structure, Critical Jobs and Skills in Demand.

1.1.2 National Skills Development Act, 2006 (Act 652)

The National Skills Development Act, 2006 (Act 652) came into effect on 1st September 2006 after it was officially gazetted on 29th June 2006, with the mandate of promoting, through skills training, the development and improvement of a person's abilities, which are needed for vocation, and to provide for other matters connected therewith. The Act 652 is significant because for the first time in the history of skills training in Malaysia, a national legislation has been enacted solely and exclusively for skills training and development. In addition, the meaning and scope of skills training have been clarified and given a statutory interpretation that can be used to distinguish it from other components of the country's national education and training system. The Act 652 also provides for the implementation of a Malaysia Skills Certification System, leading to the award of five (5) levels of national skills qualification, namely Malaysia Skills Certificate Level 1, 2 and 3; Malaysia Skills Diploma; and Malaysia Skills Advanced Diploma.

1.1.3 Malaysian Qualification Act, 2007 (Act 679)

The Malaysian Qualification Act 2007 (Act 679) which was adopted on the 29th August 2007, Establishes the Malaysian Qualifications Agency, sets out its composition, functions and responsibilities. This act repeals the *Lembaga Akreditasi Negara Act* 1996 [Act 556] and dissolves *the Lembaga Akreditasi Negara.* The Malaysia Qualification Framework (MQF) refers to the policy framework that satisfies both the national and international recognized qualifications. It consists of titles and guidelines, together with principles and protocols covering articulation and issuance of qualifications and statements of attainment. Elements of the qualification's framework indicate the achievement for each qualification title. It will also provide progression routes for all the graduates in the respective occupational fields. The MQF has eight levels of qualifications in three sectors and it is supported by lifelong education pathways as shown in Figure 1.1. JPK governs the skills sector, in which there are five (5) levels of skills qualification. The definition for each level of skills qualification is specified in the Malaysia Occupational Skills Qualification Framework (MOSQF).

<table>
<tr><th rowspan="2">MQF Levels</th><th colspan="3">Sectors</th><th rowspan="2">Lifelong Learning</th></tr>
<tr><th>Skills</th><th>Vocational and Technical</th><th>Higher Education</th></tr>
<tr><td>8</td><td rowspan="3"></td><td rowspan="3"></td><td>Doctoral Degree</td><td rowspan="9">Accreditation of Prior Experiental Learning (APEL)</td></tr>
<tr><td>7</td><td>Masters Degree</td></tr>
<tr><td>6</td><td>Bachelors Degree</td></tr>
<tr><td>5</td><td>Malaysian Advanced Skills Diploma</td><td>Advanced Diploma</td><td>Advanced Diploma</td></tr>
<tr><td>4</td><td>Malaysian Skills Diploma</td><td>Diploma</td><td>Diploma</td></tr>
<tr><td>3</td><td>Malaysian Skills Certificate 3</td><td rowspan="3">Vocational and Technical Certificate</td><td>Certificate</td></tr>
<tr><td>2</td><td>Malaysian Skills Certificate 2</td><td rowspan="2"></td></tr>
<tr><td>1</td><td>Malaysian Skills Certificate 1</td></tr>
</table>

Figure 1.1: MQF Chart

(Source: Jabatan Pembangunan Kemahiran (JPK), 2013)

1.1.4 National Occupational Skills Standard (NOSS)

The National Occupational Skills Standard (NOSS) is defined as a specification of the competencies expected of a skilled worker who is gainfully employed in Malaysia for an occupational area, level and pathway to achieve the competencies and is gazetted in Part IV of the National Skills Development Act, 2006 (Act 652). NOSS is developed by industry experts based on the needs of the industry and is utilised as the main tool in the implementation of Malaysia Skills Certification System in which the performance of existing industry workers and trainees are assessed based on the NOSS to award the Malaysia Skills Certificate.

1.1.5 Competency Based Training (CBT)

Competency Based Training (CBT) is an approach to vocational training which emphasises what a person can do in a work place as a result of education and training obtained. CBT is based on performance standards which are set by the industry with main focus on measuring the performance while taking-into-account knowledge and attitude rather than the duration taken to complete the course.

CBT is a learner-centric, outcome-based approach to training which allows each individual to develop skills at their own pace for a similar outcome. Thus, training practices can be customised for each individual to achieve a similar outcome. CBT concept is the basis of Malaysia Skills Certification system which is coordinated by JPK.

1.1.6 Occupational Framework (OF)

The Occupational Framework (OF) is described as the outcome of the occupational analysis process to identify the occupational structure of an industry. The OF which was previously known as Occupational Analysis (OA) consists of Occupational Structure (OS), Occupation Description (OD) and Skills in Demand.

The development of the OF is a preliminary process in developing relevant NOSS. Once developed, the NOSS can be used as the basis to conduct skills training and skills certification of competent personnel.

1.1.7 Malaysia Standard Industrial Classification (MSIC)

The MSIC is intended to be a standard classification of productive economic activities. Its main purpose is to provide a set of activity categories that can be utilised for the collection and presentation of statistics according to such activities. Therefore, MSIC aims to present these set of activity categories in such a way that entities can be classified according to the economic activity that they carry out. For purposes of international comparability, the MSIC 2008 Version 1.0 conforms closely to the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4, published by the United Nations Statistics Division, with some modifications to suit national requirements. The objective of an industrial classification system is to classify data in respect of the economy according to categories of activities and the characteristics of which will be similar. The MSIC is a classification of all types of economic activities and is not a classification of goods & services nor is it a classification of occupations. (Department of Statistics. MSIC 2008)

1.2 Objective of Study

The objectives of the study conducted on the Kenaf/Tobacco Products Manufacturing industry are as below:

- To produce Occupational Structure (OS) for the Kenaf/Tobacco Products Manufacturing industry from data analysis, interviews, site visits and focus group;
- To determine Occupational Descriptions (OD) of job titles in the aforesaid OS; and
- To investigate the jobs and skills in demand in the Kenaf/Tobacco Products Manufacturing industry.

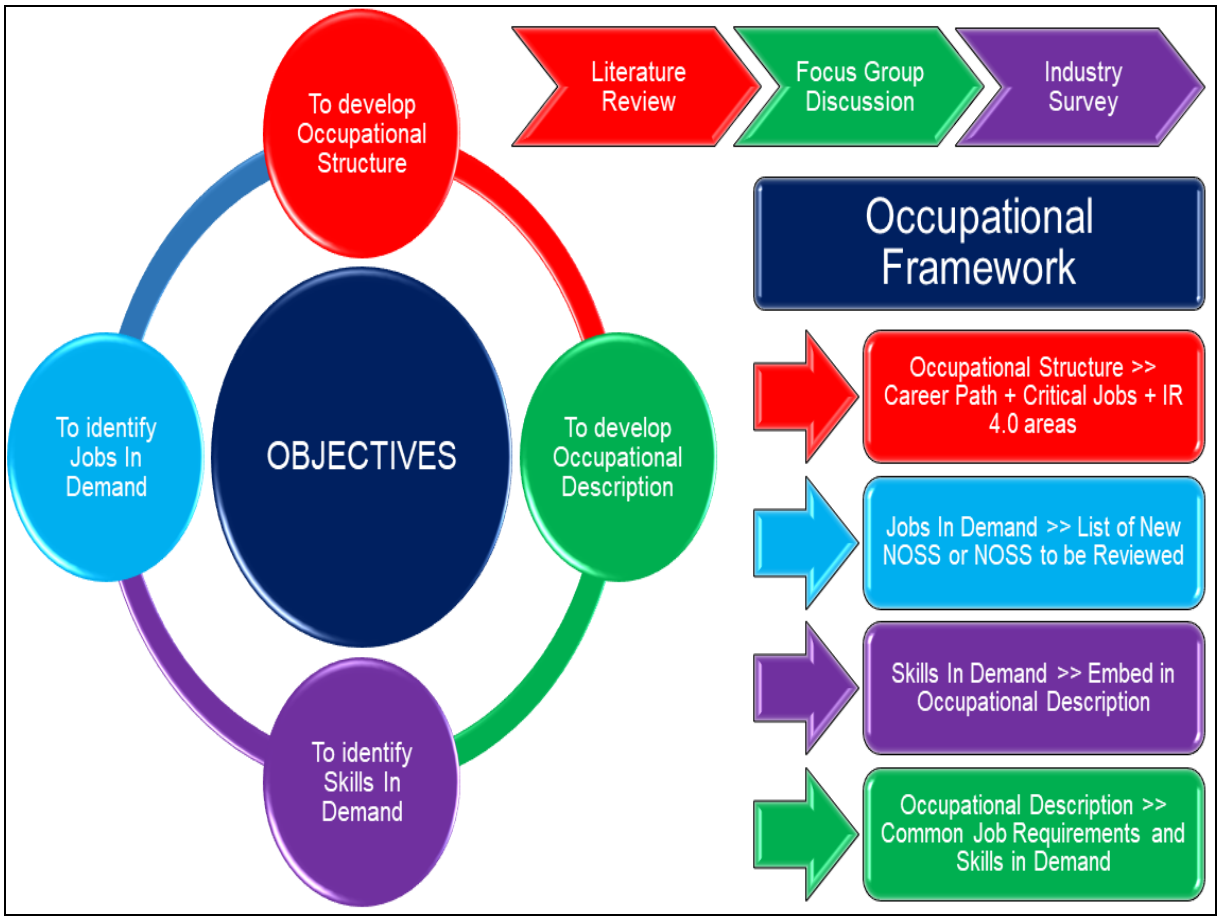

Figure 1.2: Objectives, Data Collection and Occupational Framework Outcomes

1.3 Scope of Study

The scope of work for the study conducted on the Kenaf/Tobacco Products Manufacturing industry are as listed below:

a. The scope of this research is only on the manufacturing of tobacco products and does not include the wholesale and retail trade, growing and preparation of the tobacco products.
b. To conduct literature review on the Kenaf/Tobacco Products Manufacturing industry;
c. To consult with Kenaf/Tobacco Products Manufacturing industry representatives to obtain expert input from industry;
d. The expected outcome of the research will be the OS, OD, Jobs in demand and Skills in demand;
e. To develop, disseminate and analyse survey data via Kenaf/Tobacco Products Manufacturing industry representatives; and
f. To perform focus group discussion with the industry representatives, interviews, site visits and/or any other methods in order to achieve the study outcome.

1.4 Justification for MSIC Section Selection

The justification for the selection of MSIC's Section C, Manufacturing and Division 12 for this particular Occupational Framework is as follows:

a. The scope of the Kenaf/Tobacco Products Manufacturing industry matches that of Division 12 under Section C: Manufacturing after analysing the scope of work and list of Kenaf/Tobacco products under the Groups of Division 12.
b. Division 12 does not include growing and preparation of the Kenaf/Tobacco work which is in line with the scope of the research. It only focuses on the manufacturing aspect and job functions.
c. The current NOSS registry (March 2018) has stated that the NOSS relevant to the industry are under Section C, Division 12.
d. The manufacturing of Kenaf Product had been discussed in this section since there are no specific section that discuss about kenaf product in MSIC.

In order to understand the co-relation between the scope of the MSIC groups in this particular research and industry definition provided by various resources, Table 1.1 can be referred. The table shows the mapping the sub-sector of the industry and the Group under Section C's Division 12.

Table 1.1: Mapping between MSIC Group and Industry Definition

MSIC Group	MSIC Group Description	MSIC Group Scope	Industry Definition
120	Manufacture of Kenaf/Tobacco product	This group includes the manufacture of tobacco products and products of tobacco substitutes, manufacture of "homogenized" or "reconstituted" tobacco and stemming and re-drying of tobacco	cigarettes, cigarettes tobacco, cigars, chewing tobacco, etc.

1.5 Chapter Summary

This chapter sets out the research background comprising of the legislations that are pertinent to this document (i.e. National Skills Development Act 2006 (Act 652) and Malaysian Qualification Act 2007 (Act 679)), the Malaysian Qualifications Framework (MQF), definitions of the NOSS, OF and Competency Based Training. All of which are important elements of skills training in Malaysia that should be understood by the reader beforehand.

The objectives, scope and justification of this research have also been explained in this chapter. This research aims to define the industry (as specified in the MSIC) based on qualitative research on its Occupational Structure, Jobs in Demand and Skills in Demand.

With the Occupational Structure, Jobs in Demand and Skills in Demand identified, the job scopes of the different professions involved in this industry will be clearer and therefore the development and management of human resources will be more in tune to the demands of the overall Kenaf and Tobacco Manufacturing Industry. Thus, development of this OF will enable the relevant stakeholders to take necessary strategic actions to meet the industry's human capital requirements.

CHAPTER 2: LITERATURE REVIEW

2.1 Chapter Introduction

This chapter provides a brief overview of the Manufacture of Kenaf/Tobacco Products in Malaysia, stakeholders, related legislations, key government initiatives and policies for the industry and industry intelligence.

Findings in this chapter were obtained primarily through literature review and will be further subsequently confirmed by the development panel members to obtain insight on the matters at hand from a practitioner's perspective.

2.2 Definition of Research Area

In order to review that the scope of the Manufacture of Kenaf/Tobacco Products is comprehensively covered in this Occupational Framework research, the definition of Manufacture of Kenaf/Tobacco Products has to be spelt out clearly. For the manufacturing of the Kenaf, it is not stated in the MSIC 2008. The Industry of Kenaf in Malaysia had been developed in 2010 but there are no MSIC division discussed about manufacture of kenaf industry. Therefore, the Manufacture of Kenaf will be covered in this Section and Division. Under MSIC, the area being researched falls under the Section and Division listed below:

Table 2.1: MSIC Section, Division and Group

MSIC SECTION	C	Manufacturing
MSIC DIVISION	12	Manufacture of Kenaf/Tobacco Products
MSIC GROUP	120	Manufacture of Kenaf/Tobacco Products

2.3 Scope of Occupational Framework Based on MSIC 2008

To further understand the scope of this particular Occupational Framework based on MSIC 2008, Table 2.2 below can be referred.

Table 2.2: MSIC Section, Division, Group and Item

MSIC SECTION	**C**	Manufacturing
MSIC DIVISION	**12**	Manufacture of Kenaf/Tobacco Products
MSIC GROUP	**120**	Manufacture of Kenaf/Tobacco Products
MSIC CLASS	**1200**	Manufacture of Kenaf/Tobacco Products
MSIC ITEMS	**12000**	Manufacture of Tobacco products Includes: (a) manufacture of tobacco products and products of tobacco substitutes such as cigarettes, cigarettes tobacco, cigars, chewing tobacco, etc. (b) manufacture of "homogenized" or "reconstituted" tobacco (c) stemming and re-drying of tobacco
(1) Excludes: (a) growing or preliminary processing of tobacco, see 01150, 01632		

For the Manufacture of Kenaf, there are no specific items stated in the MSIC. Therefore, the items that includes are based on literature review analysis on the process and product of kenaf industry. The process of kenaf product are includes Thermo-bonding process, Mechanical process, Bio-retting process, Pultrusion & Extrusion process, Core & Fibre of the kenaf. For the kenaf product it includes IBS, BDU, Animal Bedding, etc.

2.4 Key Stakeholders

The stakeholders for the Manufacture of Kenaf and Tobacco Products in Malaysia comprises of government agencies, regulatory bodies, industry associations professional bodies of Kenaf and Tobacco Products manufacturers.

2.4.1 Relevant Government Agencies and Regulatory Bodies

The regulatory bodies and relevant government agencies for the Kenaf and Tobacco Manufacturing industry can be referred in Table 2.3 below.

Table 2.3: List of Government Agencies/Regulatory Agencies

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
1	Ministry of Primary Industry (MPI) Website: https://mpic.gov.my	i. Maximize the contribution of the commodity-based industries to national income including GDP and foreign exchange earnings. ii. Make Malaysia a centre of excellence in R&D, technology and services in commodity-based industries. iii. Increase the efficiency, productivity, quality and sustainability of primary industries based on K-economy. iv. Enhance marketing capabilities in order to increase market share particularly in niche markets. v. Formulate policies and strategies for the overall development of the plantation and the commodity sectors. vi. Supervise agencies under the Ministry on management and implementation of plantation and commodities development programs.
2	Ministry of Agriculture & Agro-Based Industry (MOA)	i. Enact, plan and implement policies, strategies and programs for agricultural development ii. Assess, coordinate and review the implementation

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
	Website: http://www.moa.gov.my	of agro-food agricultural development projects / programs iii. Conducting research and development and innovation increases the productivity and competitiveness of the agro-food sector iv. Promoting domestic and foreign investment in the agro-food sector v. Devise and implement agro-food marketing efficiently and effectively
3	Institute of Malaysian Plantation and Comodities (IMPAC) Website: https://www.impac.edu.my	i. Produce knowledgeable and skilled workers through academic and skill-based training that meets the needs of the commodity industries ii. Become the central training unit for the training institutes of all agencies under Ministry of Primary Industries. iii. Optimize existing training resources under Ministry of Primary Industries and agencies. iv. Produce trained human resources for the plantation and commodity sectors. v. Offer general and specific courses for the plantation and commodity industries. vi. Coordinate and expand the coverage/scope of skill training. vii. Increase the use of mechanization on farms.
4	National Kenaf and Tobacco Board (LKTN) Website: http://www.lktn.gov.my	i. Implement policies and programs to review the viability of kenaf industry ii. Implement policies to regulate the tobacco industry

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
		iii. For the development and commercialization of value-added products for the activities of other economic iv. Promote and develop the kenaf industry; v. Develop objectives, policies and priorities for the development and administration of the kenaf industry in order; vi. Regulate, control and coordinate all activities relating to the tobacco industry; and vii. Promote and develop other economic activities for the people involved in the industry kenaf and tobacco.
5	Department of Occupational Safety and Health (DOSH) Website: http://www.dosh.gov.my	The Department of Occupational Safety and Health (DOSH) is responsible for reviewing the safety, health and welfare of people at work as well as protecting other people from the safety and health hazards. ii. DOSH will review that the safety and health regulations are adhered to by companies in the Tobacco Products Manufacturing industry. iii. DOSH is also responsible to carry out promotional and publicity programs to employers, workers and the general public to foster and increase the awareness of occupational safety and health.

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
6	Department of Environment (DOE) Website: https://www.doe.gov.my	i. Prevent, eliminate, control pollution and improve the environment, consistent with the Environmental Quality Act 1974 and regulations under DOE. ii. Monitor and regulate air pollution, water and groundwater pollution, regulate the treatment and disposal license wastes, carry out investigation into alleged environmental contamination and processing of Environmental Impact Assessment (EIA). iii. The Tobacco Products Manufacturing industry is under the monitoring and enforcement of DOE in terms of environmental quality.
7	Department of Agriculture (DOA) Website: http://www.doa.gov.my	i. Provide extension services and agricultural development through technology transfer based on good agricultural practices throughout the chain value in order to improve the incomes, production of high-quality crops, adequate and safe for consumption; ii. Assist and produce progressive agriculture entrepreneurs in order to improve the farm productivity and the country's agriculture production (Develop and provide skilled training workforce for the needs of the agricultural industry; iii. Protect plants and food industry from the threat of pests and diseases through plant protection programs and plant biosecurity services; iv. Determine in producing high quality crops and foods which are safe for consumption and

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
		conserve the environment
8	Malaysian Investment Development Authority (MIDA) Website: http://www.mida.gov.my	i. MIDA is the government's principal agency to oversee and drive investment into the manufacturing sectors in Malaysia. ii. In terms of the Tobacco Products manufacturing industry, MIDA's role is to promote foreign and local investments, planning for industrial development, to recommend policies and strategies on industrial promotion and development, to evaluate applications for manufacturing licenses, and expatriate posts; tax incentives for manufacturing activities, and duty exemption on raw materials, components and machinery. iii. MIDA also assists companies in the implementation and operation of their projects and helps through direct consultation and co-operation with the relevant authorities at both the federal and state levels.
9	Malaysian Quarantine Inspection Services (MAQIS) Website: http://www.maqis.gov.my	i. Enforce all relevant written laws at the entry points, quarantine stations and quarantine premises to review that plants, animals, carcasses, fish, agricultural produce, soils, microorganisms and food which are imported into and exported out of Malaysia comply with the health aspect of human, animals, plants and fish and food safety. ii. Issue permits, licences and certificates for the purpose of import and export of plants, animals, carcasses, fish, agricultural produce, soils and microorganisms.

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
		iii. Review that all plants, animals, carcasses, fish, agricultural produce, soils, microorganism and food which are imported into and exported out of Malaysia are graded, packaged, and labelling in accordance with the relevant written laws. iv. Establish and manage the quarantine stations. v. Participate in the inspection and certification of the premises of the exporting country together with. vi. Participate with the relevant agency or department at the international level in matters relating to the quarantine and import and export of plants, animals, carcasses, fish, agricultural produce, soils, microorganism and food, if necessary vii. Give feedback and recommendation to the relevant agency or department on any matter relating to the import and export of plants, animals, carcasses, fish, agricultural produce, soils, microorganism and food. viii. Facilitate and provide advisory services on the compliance of import and export condition for plants, animals, carcasses, fish, agricultural produce, soils, microorganism and food to importers, exporters and agents involved in the import and export of plants, animals, carcasses, fish, agricultural produce, soils, microorganism and food. ix. To do such other things as are necessary for the effective implementation of Malaysian Quarantine & Inspection Services Act 2010.

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
10	Malaysian Agricultural Research and Development Institute (MARDI) Website: http://www.mardi.gov.my	i. Conduct researches in the fields of science, technical, economy, and social with regards to production, utilization and processing of all crops (except rubber, oil palm and cocoa), livestock and food and integrated farming ii. Serve as a centre for collecting and disseminating information and advisory services pertaining to scientific matters, technical and economy related to food, agriculture and agro-based industry. These functions are accomplished through various methods inclusive of publication of reports, periodicals and related papers and organizing of exhibitions, conferences and seminars, and lectures iii. Serve as a centre that provides expert services in food, agriculture and agro-based industry such as consultancy services, laboratory analysis, quality assurance and contract research and development (R&D) iv. Provision of various forms of trainings to cater for the development of the food, agriculture and agro-based industry v. Provision of aid for pure and applied scientific, technical and economic research and development related to food, agriculture and agro-based industry vi. Conduct commercial research and production vii. Develop, promote and exploit the research findings viii. Provide extension services to the agriculture,

No	Government Agencies/ Regulatory Agencies	Roles, Function and Responsibilities
		food and agro-based industries.

2.4.2 Industry Associations and Professional Bodies

The Industry Associations and Professional Bodies for the Kenaf and Tobacco Manufacturing industry can be referred in Table 2.4 below.

Table 2.4: List of Industry Associations and Professional Bodies

No	Industry Association / Professional Bodies	Roles, Function and Responsibilities
1	Confederation of Malaysian Tobacco Manufacturers (CMTM)	i. Monitor Tobacco related product on output and selling pattern ii. Conduct commercial research and production iii. Serve as a centre for collecting and disseminating information and advisory services pertaining to Tobacco related product. iv. Propose affordable Tobacco product selling price v. Develop, promote and exploit the research/ study findings related to Tobacco product vi. Give feedback and recommendation to the relevant agency or department on any matter relating to the import and export of Tobacco product.
2	Malaysia Kenaf Industry Association (PIKM)	i. Communicate with government/ LKTN on the Kenaf related issues ii. Determine/ advice technical issue of Kenaf to LKTN, eg, gred of Kenaf

No	Industry Association / Professional Bodies	Roles, Function and Responsibilities
		iii. Discuss with government/ LKTN on fixing the Kenaf selling price iv. Promotion on Kenaf and related product v. Take care welfare of PIKM official members.

2.4.3 Training Centre

The Training Centre for the Kenaf and Tobacco Manufacturing industry can be referred in Table 2.5 below.

Table 2.5: List of Training Centre

No	Training Centre	Roles, Function and Responsibilities
1	Kenaf and Tobacco Training Institute (ILKT)	ILKT is the training centre established by National Kenaf and Tobacco Board (NKTB). The main objective of ILKT are to provide place, tools and accommodation for staff training and activities. ILKT are located at Pasir Mas, Kelantan.

2.5 Government Legislation, Policy and Initiatives

It is imperative that, this research has to refer to legislation, by-laws and policies that are directly related to Manufacture of Kenaf and Tobacco industry.

2.5.1 Legislation

The following Table 2.4 indicates the relevant legislations to the overall manufacturing industry which includes the manufacturing of Kenaf and Tobacco Product.

Table 2.6: List of Relevant legislations

No	Areas acts are related to	Name of Act	Function and relevance of act
1	Acts related to manufacturing (In general)	Occupational Safety and Health Act 1994 (Act 514)	An act to securing the safety, health and welfare of persons at work, for protecting others against risks to safety or health in connection with the activities of persons at work. The regulatory body for this Act is Department of Occupational Safety and Health (DOSH).[1]
		Environmental Quality Act 1974 (Act 127)	An Act relating to the prevention, abatement, control of pollution and enhancement of the environment, and for purposes connected therewith.
		Factories and Machinery Act 1967 [Act 319] / Factories and Machinery Act (Amendment) 2006	An Act to provide for the control of factories with respect to matters relating to the safety, health and welfare of person therein, the registration and inspection of machinery and for matters connected therewith.
2	Act related to tobacco control	Food Act 1983 (Act 281)	An act to protect the public against health hazards and fraud in the preparation, sale and use of food, and for matters incidental thereto or connected therewith. This act regulates, among other things; smoke free environments; tobacco advertising, promotion and sponsorship; and tobacco packaging and labelling.
3	Act of Kenaf	National Kenaf and Tobacco Board Act 2009 (Act 692)	An act related to licensing of tobacco growing, packaging and distributing. This Act also supervise the growing and manufacturing of Kenaf Product. The regulatory body for this Acts is National

[1] Legislation. http://www.dosh.gov.my/index.php/en/legislation/acts. Date accessed: 10th August 2018

No	Areas acts are related to	Name of Act	Function and relevance of act
			Kenaf and Tobacco Board (NKTB).

2.5.2 Government Policy & Initiative

National Commodity Policy

In order to develop and enhance the competitiveness of the commodity industry, including making Malaysia a world commodity hub, the efforts undertaken are aimed at achieving the following objectives:

- Increasing the contribution of the commodity industry to the country's economic development;
- Modernizing and transforming the commodity industry to be more competitive and sustainable;
- Promoting growth along the commodity industry value chain;
- Increasing the income of commodity industry entrepreneurs, including smallholders; and
- Making Malaysia a centre of excellence in research and development (R&D), plantation technology and commodity-based industries.

Thrust 1:

Empowering Commodity Industry in Country Economic Development,to empower the development of commodity industry, priority will be given to the development of new value-added and market-oriented new products. This move will be implemented through the creation of innovative new products by local R&D institutions. In addition, strategic cooperation between local and international R&D institutions will also be enhanced. Focus will also be given to improve production efficiency along the commodity industry value chain, including optimizing the use of resources.

Thrust 2:

Driving Commodities Industry Modernization, the use of modern technology, mechanization and automation will be expanded to increase commodity industry productivity. Focus is given to promote the use of technology to save costs, reduce dependence on labour force and improve quality along the value chain of the commodity industry. The modernization of commodity industries including the emphasis on Good Agriculture Practices (GAP), Good Manufacturing Practices (GMP) and Life Cycle Analysis (LCA) will facilitate access to commodity products in international markets.

Thrust 3:

Diverse Production High Value-Added Products, the business will be intensified to diversify high value-added downstream products to meet market demand. This is supported by local and international R & D collaboration networks to strengthen the contribution of existing commodity industries.

Thrust 4:

Generating a New Income Source, the focus of development is not only limited to existing commodity industries but also includes progressive efforts to advance new commodities such as sago and kenaf to generate sources of economic growth and income. This includes promoting innovation and intensifying R & D activities in the upstream and downstream sectors, especially in producing high quality plant materials and producing high value-added products. Implementing the concept of waste to wealth will continue to be developed and promoted. Through R & D activities, palm oil, rubber, cocoa and sago industrial wastes can potentially be developed to produce eco-friendly and sustainable new products. In addition to being able to generate new sources of income, the use of commodities industrial waste can also optimize resource use and help conserve the environment.

Thrust 5:

Enhancing Competitiveness and Expanding the Competitiveness of the industry is enhanced through the quality, sustainable and eco-friendly commodity-based product branding. In order to complement this effort, focus is placed on the development of products that meet the needs of consumers and the niche market. Regional and international cooperation will be strengthened to review the market of local commodity products in the global marketplace.

The dissemination of information on sustainable industry and commodity products will be implemented more broadly through the cooperation of private sector and non-governmental organizations. The use of up-to-date information and communication technology will be enhanced, including creating intelligence systems and information on the country's commodity markets. This is to facilitate the broader trade of national commodities in international markets.

Thrust 6:

Promoting Smallholders and Entrepreneurs Small commodities will continue to be developed through integrated development approaches, including promoting replanting programs using quality crop materials, providing technical advice and increasing use of mechanization. This sector is also strengthened by promoting smallholder's management in groups, including integrated with value-added processing activities. Developing entrepreneurship-based entrepreneurship efforts will continue to be intensified through training, skills upgrading and technology transfer. This is supported by efforts to increase market access, including promotion of certification, packaging, branding and participation in trade fairs. Initiatives to enhance marketing and promotion networks will also involve collaboration with Government and private stakeholders.

Thrust 7:

Developing and Empowering Human Capital Human capital development will be strengthened, primarily to increase the number of skilled and semi-skilled people to drive modernization and enhance the competitiveness of the commodity industry. Focus will be given to raise the level of skills and knowledge of employment at both upstream and downstream levels in the use and dissemination of the latest technologies. Human capital development efforts will be expanded through the strengthening of the role of the Institute of Malaysian Plantation and Commodities (IMPAC), including establishing partnerships with the industry. Recognition of courses and skills training offered will enhance the image of a career and be able to attract more local workforce into the commodity industry. In addition, collaboration with local and overseas institutions of higher learning in areas required by industries such as biotechnology, mechanization and plantation engineering will be developed to meet industry needs.

Eleventh Malaysia Plan (11th MP)

The manufacturing sector is estimated to grow at 4.8% per annum during the Tenth Plan and contribute 23% to GDP in 2015. Manufactured goods also dominated exports, contributing RM636.7 billion or 81.8% of total exports in 2015. The growth of the sector was contributed largely by the electrical and electronic (E&E) and chemicals subsectors. The value added of E&E increased from RM44.2 billion in 2011 to RM53.8 billion in 2015, partly due to new applications for semi-conductors in digitalisation, mobility, connectivity, energy efficiency, and miniaturisation. The chemicals subsector recorded an average growth of 3.4% per annum with an increase in value added from RM24.8 billion in 2011 to RM27.8 billion in 2015, as chemical products are important inputs to fast-growing industries such as automotive, E&E, pharmaceuticals, and construction. Performance of the sector was driven by strong demand from the Association of Southeast Asian Nations (ASEAN) member countries and Free Trade Agreement (FTA) partners.[2]

Investment in manufacturing amounted to RM159.1 billion, which accounted for 20.4% of total approved investment between 2011 and 2014. Of this amount, domestic direct investment (DDI) represented 42.8% and foreign direct investment (FDI) represented 57.2%. This investment provided an estimated 348,000 new job opportunities, out of which 75% was in the managerial, technical, supervisory, and skilled categories. Overall, the sector is expected to provide 2.5 million jobs, representing 17.5% of total employment in 2015.

In the Eleventh Plan, the manufacturing sector will transition towards more high-value, diverse and complex products, driven by three catalytic subsectors, namely chemicals, E&E and machinery & equipment (M&E) as well as industries with high potential growth such as medical devices and aerospace. These subsectors have strong interlinkages to other manufacturing subsectors and have demonstrated capabilities and potential to deliver more complex and high value-added products. The manufacturing sector is expected to grow at 5.1% per annum and contribute 22.5% to GDP as well as 18.2% of total employment by 2020.This transition will be underpinned by enhanced R&D, more sustainable manufacturing practices, greater compliance to global standards, and collaboration between stakeholders.

[2] Eleventh Malaysia Plan. Chapter 8: Re-engineering economic growth for greater prosperity. Focus area B Energising manufacturing. Page 242-258

To this end, five strategies have been identified to grow and energise the manufacturing sector.

- Strategy B1: Moving towards complex and diverse products by strengthening the output base and increasing exports of frontier products;
- Strategy B2: Enhancing productivity through automation supported by developmental and performance-based financial assistance and collaboration with industry;
- Strategy B3: Stimulating innovation-led growth by engaging with intermediaries to increase R&D and innovation activities as well as implementing sustainable consumption and production practices;
- Strategy B4: Strengthening growth enablers by improving access to financing, prioritising performance-based incentives as well as increasing competitiveness of the logistics supply chain and industrial estates; and
- Strategy B5: Ramping up internationalisation by providing targeted support to exporters, leveraging the AEC and FTAs as well as encouraging smart partnerships between SMEs and MNCs.

The summary of the strategies to grow and energise the manufacturing sector are as shown below:

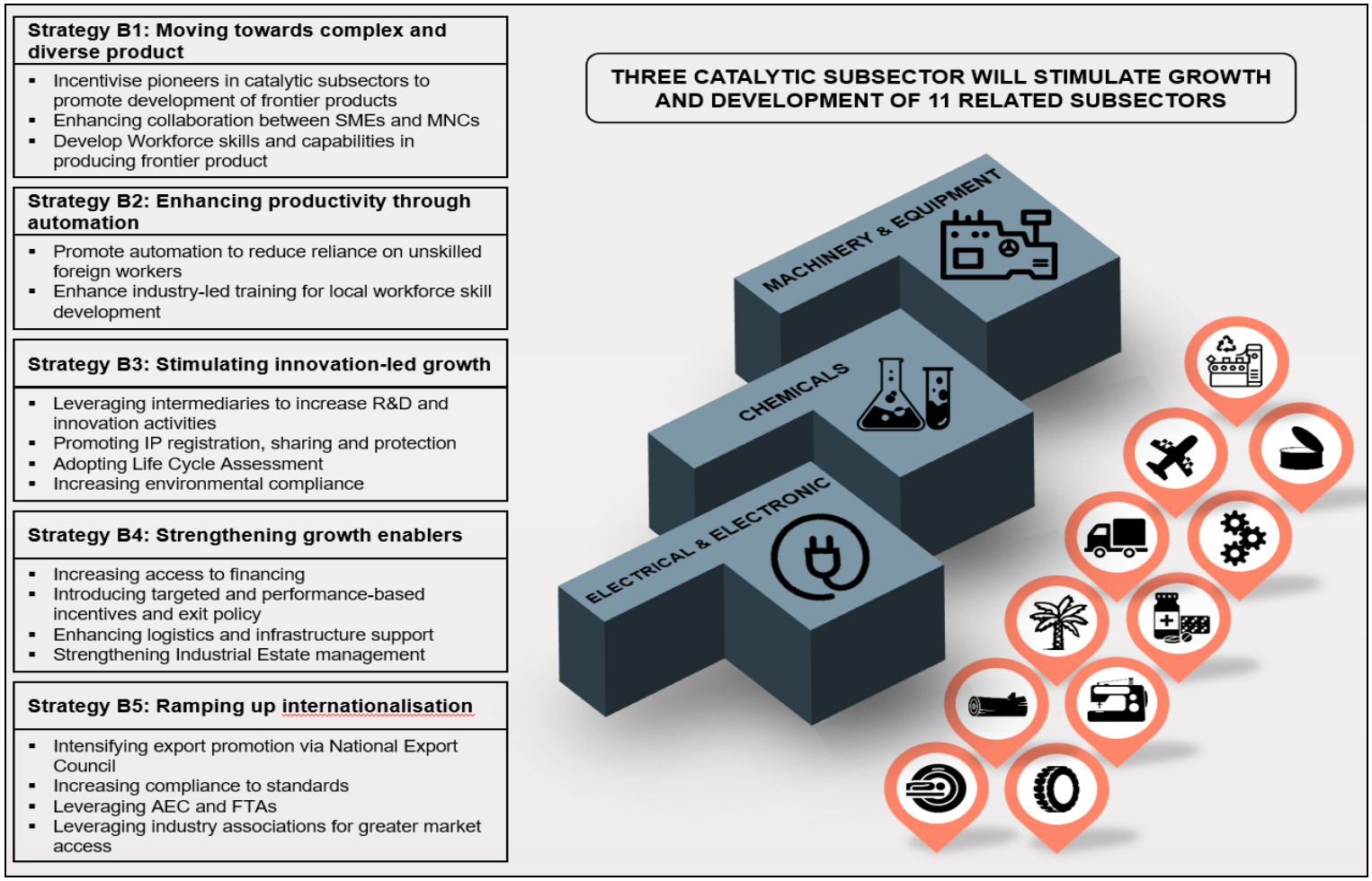

Figure 2.1: Strategic Framework for Manufacturing Sector

(Sources: Eleventh Malaysia Plan 2016-2020)

2.6 Industry and Market Intelligence

This section provides an overview of the relevant factors which have substantial impact on the industry. Such information may be used to forecast the future manpower needs of the industry and to influence the necessary manpower planning.

2.6.1 Industry Economic Growth

Sales Value

The Manufacturing sector recorded a sales value of RM67.1 billion in June 2018, with a growth of 7.8 per cent (RM4.8 billion) as compared to RM62.3 billion reported a year ago (Figure 2.2). Meanwhile, month-on-month basis, the sales value increased by 2.7 per cent (RM1.8 billion) as compared with the preceding month. On a seasonally adjusted month-on-month, the sales value in June 2018 decreased by 0.8 per cent. Year-on-year, the significant increase in sales value in June 2018 was due to the increase in Electrical and Electronics Products (9.2%), Petroleum, Chemical, Rubber and Plastic Products (7.3%) and Non-Metallic Mineral Products, Basic Metal & Fabricated Metal Products (6.0%).[3]

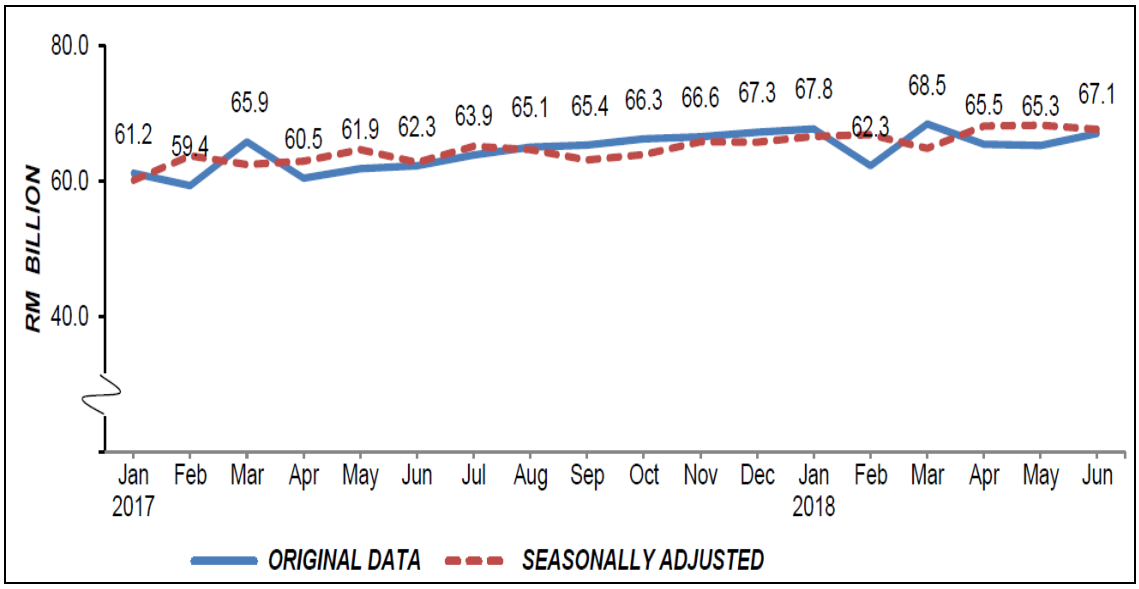

Figure 2.2: Sales Value of the Manufacturing Sector

(Source: Department of Statistic Malaysia)

[3] Monthly Manufacturing Statistics, Malaysia. Jun 2018. Page 4-6

Number of Employees

Total employees engaged in the Manufacturing sector in June 2018 was 1,070,776 persons, an increase of 2.2 per cent or 22,556 persons as compared to 1,048,220 persons in June 2017 (Figure 23). Meanwhile, month-on-month basis, the number of employees increased 0.1 per cent as compared to 1,070,000 persons in the preceding month.

Salaries & Wages

Year-on-year basis, salaries & wages paid in June 2018 increased by 10.2 per cent (RM357.2 million) as compared with the corresponding month of the previous year. Meanwhile, month-on-month basis, the total amount paid in June 2018, increased by 1.2 per cent (RM45.6 million) to register RM3,856.7 million. The average salaries & wages paid per employee increased by 7.9 per cent in June 2018 as compared to the same month in 2017. Whilst, average salaries & wages paid per employee registered RM3,602 in June 2018, an increase of 1.1 per cent compared to previous month.

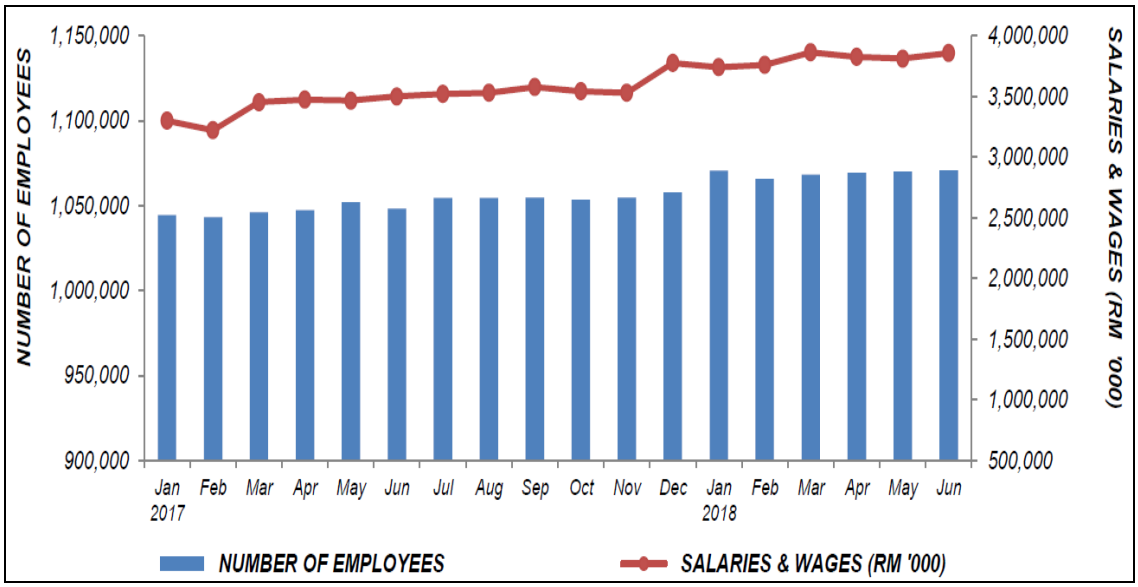

Figure 2.3: Number of Employees and Salaries & Wages in Manufacturing Sector

(Source: Department of Statistic Malaysia)

Average Salaries & Wages Per Employee

The average salaries & wages paid per employee increased by 7.9 per cent in June 2018 as compared to the same month in 2017. Whilst, average salaries & wages paid per employee registered RM3,602 in June 2018, an increase of 1.1 per cent compared to previous month.

Sales Value Per Employee

The average sales value per employee in June 2018 increased by 5.5 per cent as compared with the same month of the previous year. Meanwhile, on month-on-month basis, increased by 2.6 per cent to register RM62,665.

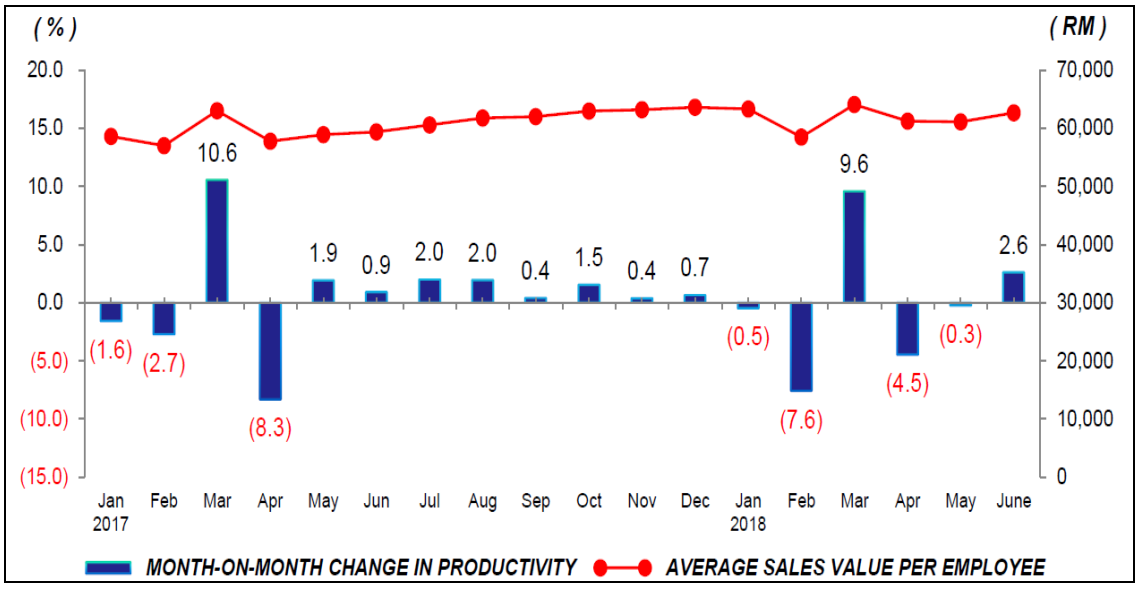

Figure 2.4: Productivity Performance of the Manufacturing Sector

(Source: Department of Statistic Malaysia)

Performance in The Period January – June 2018

During January – June 2018, the sales value of the Manufacturing sector increased 6.8 per cent to register RM396.5 billion. The number of employees engaged during the period, increased by 2.2 per cent to register 1,070,776 persons. Cumulatively, sales value per employee during the reference period increased by 4.6 per cent to record RM370,288 as shown in Table 2.5.

Table 2.7: Sales Value, Num. of Employees and Salaries & Wages, January – June 2018

Monthly Manufacturing Statistic	January - June		% Change
	2017	2018	
Sales Value (RM million)	371,188.0	396,495.3	6.8
Number of Employees	1,048,220	1,070,776	2.2
Salaries & Wages (RM million)	20,410.0	22,855.7	12.0
Sales Value Per Employee (RM)	354,113	370,288	4.6

Performance of SMEs GDP

The contribution of SMEs GDP to Malaysia's economy expanded to 33.1 per cent (Figure 2.5), an increase of 0.5 per cent from year 2012. Value added of SMEs at constant 2005 prices was RM261.0 billion in 2013 as compared to RM245.6 billion in the preceding year. In current prices, SMEs registered a value added of RM325.9 billion (2012: RM305.0 billion).

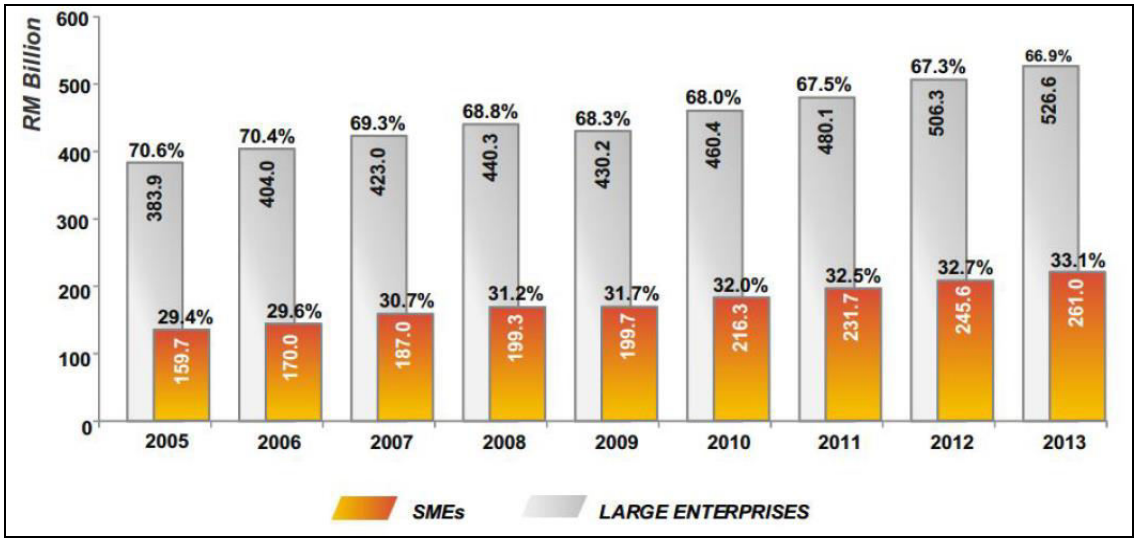

Figure 2.5: Value Added and Percentage Share to Overall GDP at Constant 2005 Prices, 2005 – 2013

(Source: Department of Statistic Malaysia)

Annual growth

In 2013, the growth of SMEs GDP strengthened to 6.3 per cent as compared to the growth of Overall GDP at 4.7 per cent as shown in Figure 2.6. The growth of SMEs GDP was supported by positive momentum across all sectors with Services, Manufacturing and Construction being the major contributors. These sectors accounted for 88.8 per cent to total SMEs GDP. Services sector led the strong performance in SMEs GDP by posting a growth of 6.8 per cent as against 5.9 per cent recorded in Overall GDP. The Wholesale & retail trade and accommodation & restaurants sub-sector has consistently remained as the prime mover in stimulating the SMEs GDP. Value added of SMEs for Manufacturing sector grew 4.7 per cent, a faster pace than 3.5 per cent registered in Overall GDP. The growth was underpinned by Petroleum, chemical, rubber & plastic products largely in products related to plastics. Furthermore, Food, beverages and tobacco showed a favourable performance which was impelled by manufacture of bread, cake, cookies and non-alcoholic beverages. Value added of SMEs in Construction sector remained robust with a growth of 14.3 per cent, relatively higher than the 10.9 per cent posted in Overall GDP.

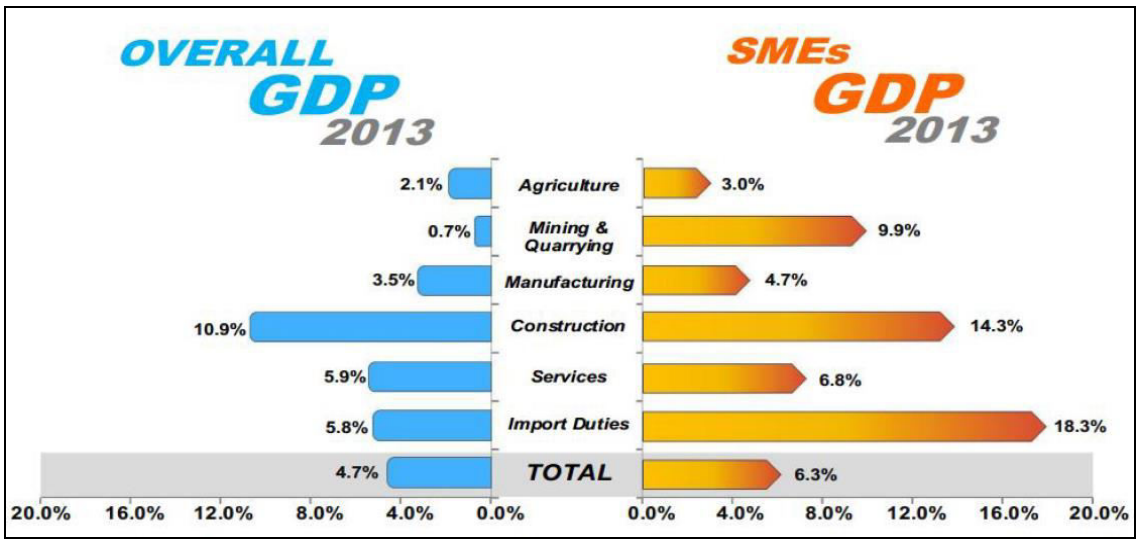

Figure 2.6: Annual Growth of Overall GDP and SMEs GDP at Constant 2005 Prices for Year 2013

(Source: Department of Statistic Malaysia)

Distribution by kind of economic activity

The structure of Malaysia's economy is highly concentrated in Services, followed by Manufacturing and Mining & Quarrying sectors (Figure 2.7). From SMEs GDP perspective, the distribution was led by the Services (62.1 per cent) and Manufacturing (23.7 per cent), replicating the nation's economic structure. Following the distinct characteristics observed in SMEs, Agriculture (9.7 per cent) was the third largest contributor and the remaining sectors constituted 3.2 per cent of share to the SMEs GDP.

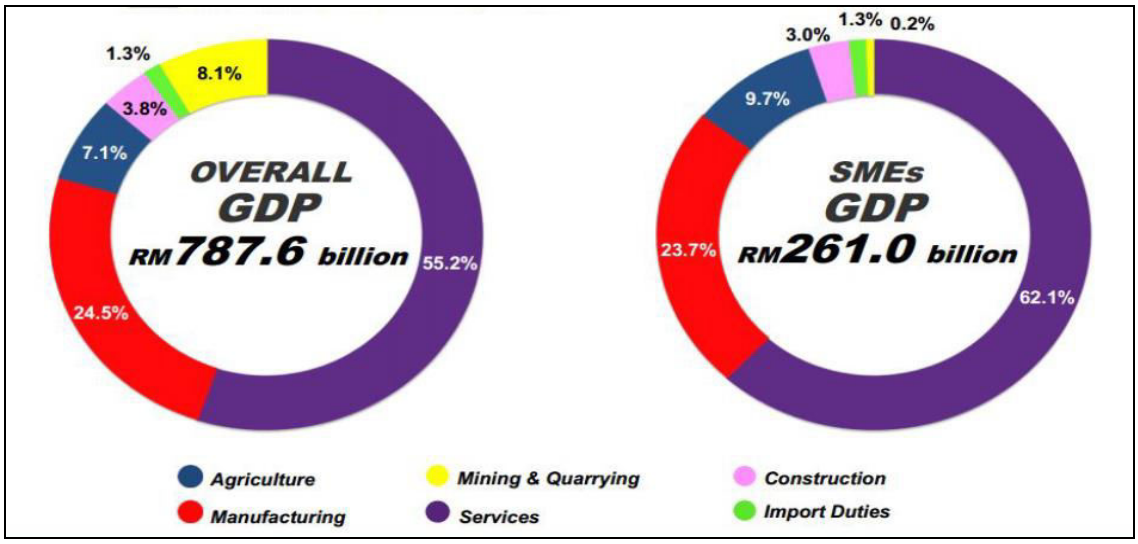

Figure 2.7: Percentage Share of Overall GDP and SMEs GDP at Constant 2005 Prices, for Year 2013

(Source: Department of Statistic Malaysia)

Contribution by kind of economic activity

SMEs activities are prevalent in Agriculture, Services and Manufacturing sectors. SMEs value added for Agriculture sector registered a major share of 45.2 per cent (Figure 2.8). The SMEs were profoundly reflected in Rubber, oil palm, livestock and other agriculture subsector. Fishing found its share in the SMEs and largely led by marine fisheries. Value added of SMEs contributed a vital share of 37.3 per cent in Services sector which was largely concentrated in Wholesale & retail trade and accommodation & restaurants. Finance, insurance, real estate and business services also bolstered this sector significantly particularly in professional services.

The share of SMEs value added for Manufacturing sector was 32.0 per cent, contributed substantially by Petroleum, chemical, rubber and plastic products. In addition, SMEs activities were also prominent in Food, beverages and tobacco and Non-metallic mineral products, basic metal and fabricated metal products. In 2013, value added of SMEs for Construction sector contributed 26.7 per cent whereby Special trade and Civil engineering were the catalyst of this sector. Nevertheless, value added of SMEs in Mining & Quarrying sector such as quarrying of granite and limestone contributed a marginal share of 0.8 per cent. (Department of Statistics Malaysia, 2014)

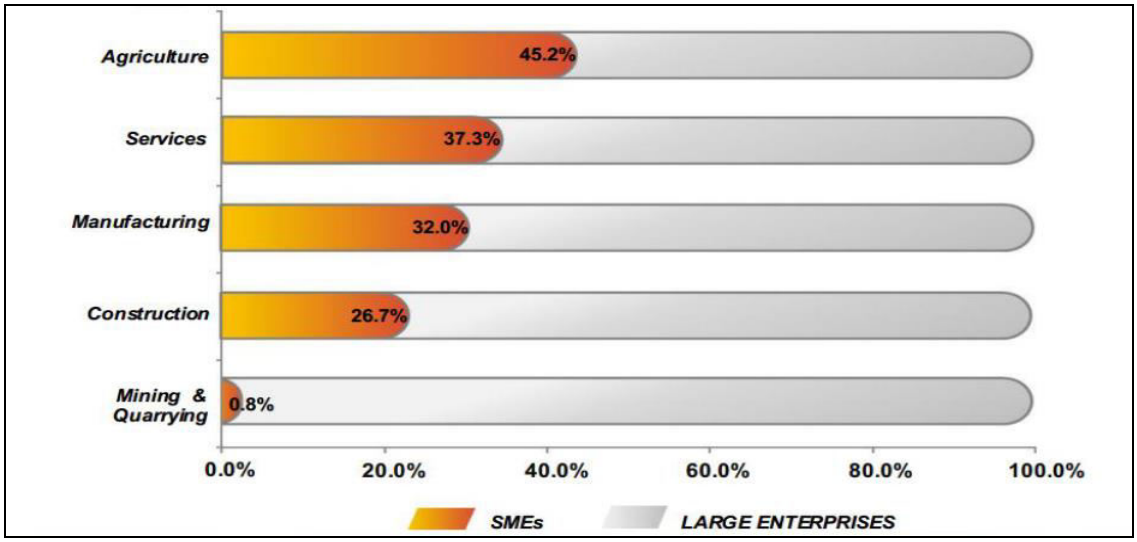

Figure 2.8: Contribution of SMEs GDP to Overall GDP at Constant 2005 Price for Year 2013

(Source: Department of Statistic Malaysia)

Kenaf Industry Economic Growth

Kenaf are cultivated almost exclusively in developing countries of East Asia and in some parts of Latin America. Bangladesh, China, India and Thailand account for over 90 percent of world production. The fibre is processed mainly in the producing countries themselves and is used for the manufacturing of traditional products such as hessian cloth, food grade bags, carpet backing and another floor covering. Kenaf is constitutes a low proportion of the value of world trade, but its cultivation and processing are labour-intensive and therefore provides a livelihood and an important source of food security for many farmers and their families in Asia.

Malaysia-grown kenaf is breaking into the world market. The local produce of kenaf had penetrate the China market with a shipment of 20 tonnes of fibre for the automotive and furniture industries there. This amount was increased to 200 tonnes per month and had garner about RM2.4 million revenue a year. All of this event shows that kenaf is one of the potential crops in Malaysia that can compete in the global market.

The growing demand for Malaysian-produced kenaf fibre is because of its high quality. This is due to the use mechanical methods to produce it for the non-woven (non-textile) sectors such as construction, automotive and furniture. Although China is also producing kenaf, but the amount of kenaf growing is still not sufficient for their market. The amount of fibre exported would increase in time, but for now, it is 200 tonnes. Malaysia is look forward to exporting to other countries in the region because of this plant has high potential of supplying the automotive industry and its high value fibre.

Kenaf growing was first introduced in Kelantan, Terengganu and Pahang in 2004, the fast-growing plant needs just four months between growth and harvest with two cycles a year. Its cultivation only took off actively after the board was set up in 2010. By exporting kenaf to the China market, Malaysia is preparing for the huge growth in China's massive auto, construction and furniture sectors. The exports would be conducted on a joint-venture basis between the board and local company P&C Global Enterprise, which is based in Sungai Petani, Kedah.

According to the board's 10-year master plan, which starts next year, the board had targeted about 10,000ha for kenaf cultivation, that would fetch the industry revenue of RM75 million in raw material output alone by 2020. The federal government pumped in RM63 million into this industry for research and development (R&D), to increase the number of farms and seedlings. All of this show how kenaf can contribute in agriculture development in Malaysia

2.6.2 The Manufacturing of Kenaf &Tobacco industry and the 4th Industry Revolution (IR 4.0)

Industry Revolution 4.0 Definition

Coined by German economist Klaus Schwab in 2015, the Fourth Industrial Revolution is used to describe the emergence of the Digital Economy and use of automation and data exchange in industrial technologies.

Commonly referred to with the catchphrase Industry 4.0 it also included the Internet of Things (IoT) and collaboration between networked machines and human beings in decision-making.

Technology experts are already speaking about the coming industrial revolution as one that has the potential to disrupt every industry in every country due to the exponential pace that is the nature of digital revolution which is at the heart of Industry 4.0. This is already happening in businesses and industries as robotics and artificial intelligence can take over jobs traditionally manned by human labour, in particular technical processes that can easily be computerized. Figure below depicts the progression of the industry revolutions:

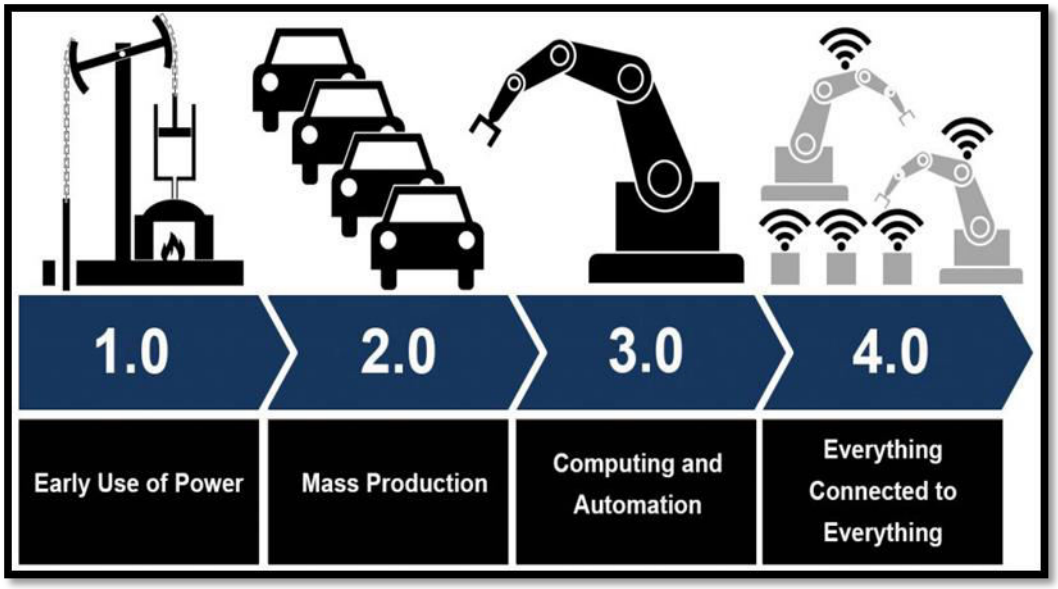

Figure 2.9: Industry Revolution 4.0

(Source: https://en.wikipedia.org/wiki/Industry_4.0)

IR4.0 is a technological revolution, which starts from the First Industrial Revolution to the Third Industrial Revolution. Briefly, the First Industrial Revolution used water and steam power to mechanise production. The Second revolution used electric power to create mass production. The Third used electronics and information technology to automate production. The Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion and convergence of technologies that cut across the physical, digital, and biological spheres.

According to the Malaysia Ministry of International Trade and Industry (MITI), the 9 main pillars of Industry 4.0 which actually reflect more on the different technologies used in an Industry 4.0 environment, are as follows:

i. Autonomous Robot;
ii. Big Data Analytics;
iii. Supply Chain;
iv. Additive Manufacturing;
v. Cloud;
vi. Cybersecurity;
vii. Industrial Internet of Things (IoT);
viii. Horizontal & Vertical Integration; and
ix. Simulation & Augmented Reality.

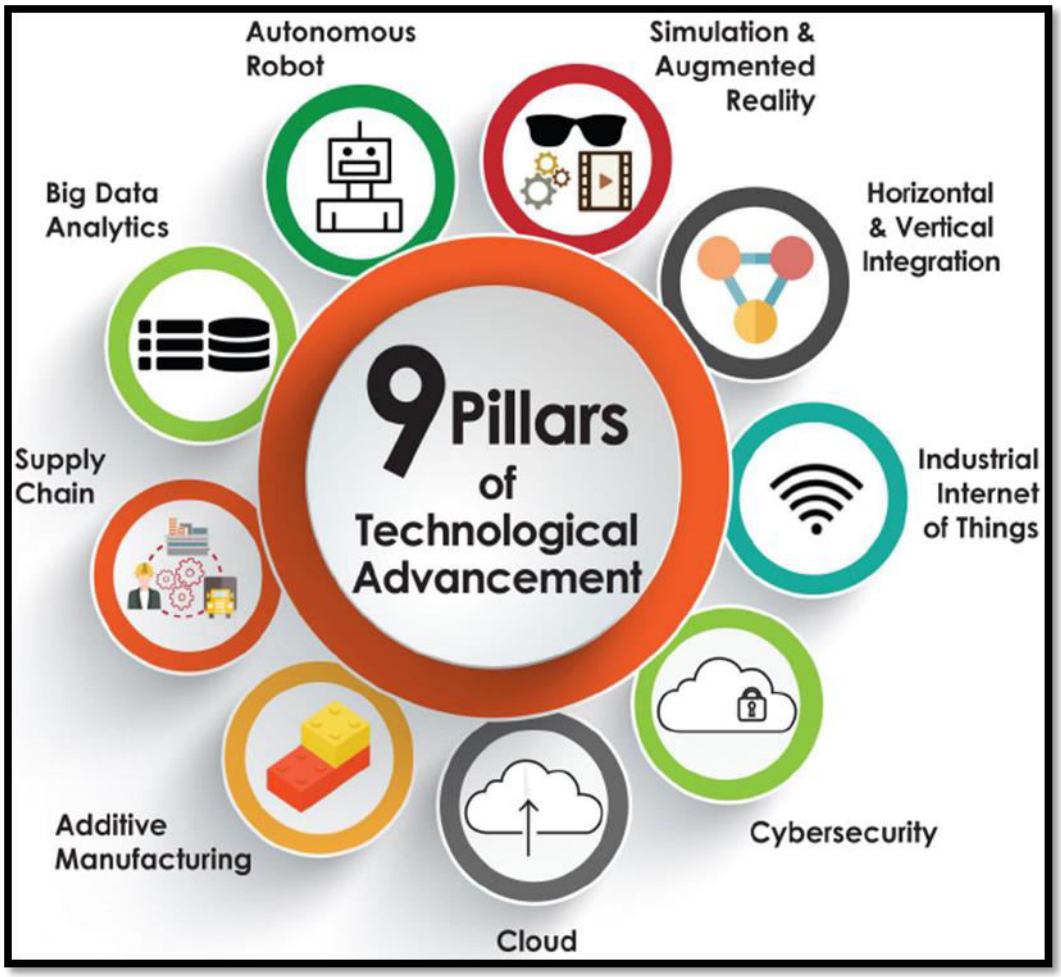

Figure 2.10: 9 Pillars of Technological Advancement in IR 4.0

(Source: PSDC Small and Winning Big Strategy)

Malaysia's manufacturing sector as a whole varies in terms of where they are currently ranging between 2.0 (mass production) and 3.0 (automation). However, there are industry leads already in the process of moving towards Industry 4.0 or becoming Industry 4.0 compliant on their own.

Industry 4.0 in Manufacturing of Kenaf and Tobacco industry

The Industry revolution 4.0 is about companies orienting themselves to the customers through eCommerce, digital marketing, social media and the customer experience. There are 9 pillars of technological advancement have been introduced and based on these pillars, the idea of evolving manufacture sectors especially Manufacturing of Kenaf and Tobacco industry had been sort out in order to increase the productivity and reduce low skilled worker involvement to prevent human error.

Figure 2.11: Industry 4.0 concept in Manufacturing

(Source: http://blog.stratasys.com)

As shown in figure 2.1 above, the application of technology on manufacture industry in Malaysia are common where workers start to adopt technologies for remote monitoring and Internet of Thing (IOT) to manage their work and also to perform certain decision to meet desired condition. The technologies applied such new automation and machinery has been tested and adopted to perform the tasks since the implementation of Industry 4.0.

The Government is committed to move away from low-skilled/foreign workers dependency particularly for the manufacturing sector. Adopting new technology to review companies be more efficient and productive will be in tandem with global trends. Cheap labour is unsustainable in the long run and prone to human errors thus reducing the quality of products produced. A prime example is China that is moving towards digitalization on a large scale despite the abundance of cheap labour in the country. The adoption of Industry 4.0 in this type of organisation will increase efficiency and promote zero-defect outputs. A study by The Boston Consulting Group has stated that rapid adoption of Industry 4.0 could boost labour productivity by as much as 30% by 2024.

2.7 Existing National Occupational Skills Standards (NOSS) Relevant to The MSIC Section C and Group 12

Currently there are 9 National Occupational Skills Standards (NOSS) developed by Jabatan Pembangunan Kemahiran (JPK) that are relevant to the sub-sectors and areas in the Manufacture of Kenaf/Tobacco industry. The details of the existing NOSS relevant to the Manufacture of Kenaf/Tobacco industry are in the tables below.

Table 2.8: Summary of NOSS developed under the Group C 120

(Source: NOSS Registry May 2018)

MSIC Group	Corresponding NOSS/ Level	
120 Manufacture of Kenaf/Tobacco Product	1. EE-302-3:2014	Chargeman L3
	2. FB-012-3:2009	Store Supervisor L3
	3. AF-090-3:2010	Quality Control Supervisor L3
	4. AF-090-2:2010	Assistant Quality Control L2
	5. EE-310-2	Electrical Technician L2
	6. F410-003-2:2017	Foreman L3
	7. MC-040-3:2013	Product Development Supervisor L3

2.8 Chapter Summary

Based on the literature review findings, the area of Kenaf and Tobacco Products manufacturing is seen as one of the main contributors to the economic performance and foreign investment. Currently there are several stakeholders in the industry comprising of government agencies (i.e. MPI, MOA, IMPAC, KLTN, etc.) involved in the development and monitoring of the industry in terms of compliance to the relevant acts and regulations.

The manufacturing of Kenaf and Tobacco products includes products regulated by CMTM and LKTN as this type of products are highly regulated due to the affect they may have on the safety of its users and may be hazardous in certain instances. In general, the tobacco products are regulated to meet safety requirements for users in Malaysia and also for Import/Export purposes. Therefore, in this report, the acts highlighted are those related to manufacturing in general and also acts related specifically to the type of tobacco products.

In order to increase employment mobility for the workforce, it is imperative that the occupational areas are redefined in the Occupational Structure. This is to allow scalability of skills and to accommodate the emerging skills required in the current Industrial Revolution, which is the 4th Industrial Revolution. Segmentation of the industry based on the Malaysia Standard Industrial Classification (MSIC) is also taken into consideration in order to be in sync with data from the Department of Statistics on labour demographics. This industry in particular falls under Section C: Manufacturing, Division 12: Manufacture of Tobacco Products under MSIC.

CHAPTER 3: METHODOLOGY

3.1 Chapter Introduction

This chapter describes the methodology to be used in the occupational analysis process for the purpose of developing the Occupational Framework (OF) for the Manufacture of Kenaf and Tobacco Products.

3.2 Research Methodology

In this study, qualitative analysis was selected as the main method of obtaining and analysing the necessary input in view of the Kenaf and Tobacco Products Manufacturing industry's Occupational Framework and the types and sources of information required to develop the occupational framework.

Qualitative analysis was selected as the method of research because of the following:

- It investigates not only the what, where and when, but also the why and how of the decision-making process;
- It requires smaller but more focused samples; and
- It focuses on unique themes that illustrate the range of the meanings of the subject matter rather than the statistical significance of the occurrence.

This process uses inductive reasoning, by which themes and categories emerge from the data through the researcher's careful examination and constant comparison. This study uses a combination of the following methods to gather information:

a. Document Analysis;

b. Focus Group Discussion (FGD)

c. Survey Analysis & Industry Visit

Figure 3.1 shows the operational framework of the research and expected outcomes.

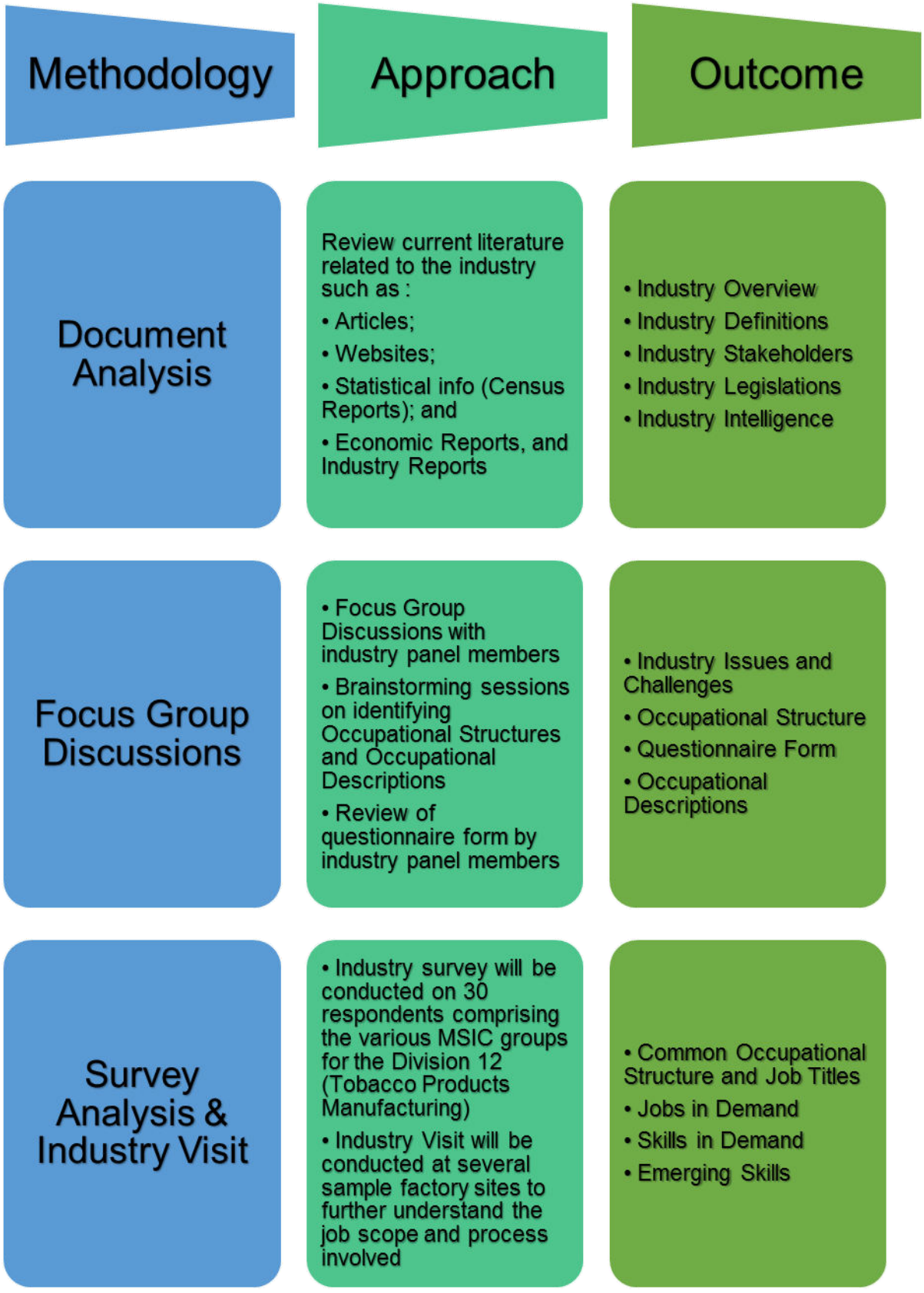

Figure 3.1: Operational Framework of Research

Below are the development phases of the Division 12: Manufacture of Kenaf/Tobacco Products

3.2.1 Phase 1: Inception

a. Document Analysis

Document analysis or literature review was done in the Inception Phase to obtain an overview of the industry in terms of Industry Definition, Stakeholders, Acts and Industry Intelligence. In this process, pertinent and relevant information published by the government, regulatory and professional bodies, news agencies, research agencies and any other sources relevant to the background information of the Kenaf Products Manufacturing industry were reviewed and analysed. Most information obtained was mainly on the larger industry, which was either the Manufacturing Industry or the Kenaf Industry rather than specific info on the Kenaf Industry.

Details of the sources for the documents reviewed can be referred in the Reference section of this report, but generally the documents referred during the document analysis phase were as follows:

i. Department of Statistics Census Report

ii. Department of Statistics data on Employment and Industry Productivity

iii. MITI Frequently Asked Questions (FAQ) on Industry 4.0

iv. NOSS Registry May 2018

v. Malaysia Standard Industrial Classification (MSIC) 2008

vi. Online newspaper/magazine articles

vii. Official websites of industry stakeholders and legislations

viii. Etc. (as listed in the references section of report)

The outcome of this step is an overall view of the industry as described in Chapter 2 which includes the list of stakeholders (i.e. Regulatory bodies, related government agencies, certification organisations, industry associations), legislations, policies and initiatives, industry and market intelligence, MSIC scope of section and groups, plus the list of developed NOSS relevant to the Kenaf/ Tobacco Products Manufacturing industry.

b. Industry Engagement / Focus Group Meeting with Development Panel

The Industry Engagement/Focus Group Discussion (FGD) meeting with the development panel members was conducted to confirm the findings obtained during document analysis with them, review the draft questionnaire form in order to gauge the response of the industry and obtain industry intelligence information such as issues and challenges and use of Industry 4.0. This is because there is certain information especially for the industry intelligence section that is not available in the form of available literature.

Facts obtained during the literature review were discussed and presented to the Development Panel members, comprising representatives from various sectors of the industry in focus group workshop sessions for their review and confirmation. The Focus Group Discussion held on 31st August till 2nd September 2018, was participated by the 5 representatives listed below:

Table 3.1: List of Focus Group Discussion panel members

No	Name	Position	Organisation	MSIC Group
1	Mohd Fajrol Zakuan bin Mohd Yussof	Pengarah Negeri	LKTN, Kedah	120
2	Mohd Norsyam bin Yahaya	Pengarah Negeri	LKTN, Terengganu	120
3	Mohd Azizi bin Awang	Pen. Pegawai Ehwal Ekonomi	LKTN, HQ	120
4	Nik Norhisyam bin Nik Yaacob	Pen. Pegawai Ehwal Ekonomi	LKTN, HQ	120
5	Mohd Kamil bin Ismail	Pen. Pegawai Sains	UPM, Serdang	120

Other than confirming the document analysis findings with the development panel, initial information was also obtained from the Focus Group Discussions such as the Occupational Structures, Skills in Demand and Emerging Skills. The scope of the analysis was centred on the following key areas:

- Industry background;
- Occupational structure; and
- Skills in demand.

The Focus Group Discussion members who are also considered as the core development panel members for this research, together with the facilitator have produced the draft survey questionnaire in the first Focus Group Discussion held on the 31th August – 2nd September 2018. The questionnaire can be referred in Annex 3 of this report. The questionnaire seeks to elicit information on the key areas from the industry representatives. The dates, venue and activities of the industry engagement sessions involving industry players, government agencies and subject matter experts are as below:

Table 3.2: List of Industry Engagement Sessions

Date	Venue	Activity
31 Aug - 2 Sept 2018	Ibis Style Hotel, Cheras-KL	• Identification of Preliminary Literature Search • Identification of Occupational Structure • Confirmation of Preliminary Literature Search • Confirmation of Occupational Structure • Development of Job Description
21 - 23 Sept 2018	Ibis Style Hotel, Cheras-KL	• Confirmation of Preliminary Literature Search • Confirmation of Occupational Structure • Development of Job Description

The second Focus Group Discussion were held on 21th – 23th September 2018. The previous 5 representatives from various sector specialising in the manufacturing of kenaf product were invited. The occupational descriptions were developed with the development panel, and the jobs in demand, skills in demand and emerging skills were confirmed via the industry survey.

c. Validation of the Literature Review and Questionnaire by Review Panel

The draft report and survey questionnaire were then reviewed and validated by the Review Panel comprising industry representatives.

A sample of the validated survey questionnaire is included in this report in Annex 3. The table below lists the evaluation sessions conducted to review the OF document.

Table 3.3: List of Evaluation Sessions

Date	Venue	Activity
18 – 19 Sept 2018	Ibis Style Hotel, Cheras-KL	• Initial evaluation of Preliminary Literature Search, Occupational Structure, Job Description
19 – 20 Oct 2018	Ibis Style Hotel, Cheras-KL	• Final evaluation of Preliminary Literature Search, Occupational Structure, Job Description

3.2.2 Phase 2: Interim

a. Interview survey

Interview surveys will be conducted concurrently during the industry survey, where the survey respondents will comprise of those from all job areas under the Manufacture of Kenaf and Tobacco Products. The interviews will try to obtain a 'house view' which means the agreed upon response for the organisation. The target group for the survey is the organisation's Human Resource or higher management representatives. The targeted number of industry survey respondents are 30 people from 9 different sub-sector. These interviews aim to obtain information on the common occupational structures used in various organisations, their job scopes, skills gap and emerging skills required. The actual number of interview respondents is targeted to be from MSIC group of kenaf manufacturing. The survey was conducted on 3rd – 5th September 2018.

Table 3.4: Number of Targeted and Actual Respondents According to MSIC Group

MSIC Section	C	Manufacturing	Number of Targeted Respondents	Number of Actual Respondents
MSIC Division	12	Manufacture of Kenaf/Tobacco		
MSIC Group	12	Manufacture of Kenaf/Tobacco	30	30

b. Qualitative Data Analysis

The findings from these interviews will be tabulated and presented in Chapter 4 of this report as Occupational Structure, Skills in Demand, Jobs in Demand and Emerging Skills. The information collected regarding organisation structures will be analysed during the following focus group discussion when determining the Occupational Structure. Thematic reasoning will be used when analysing the data based on the main objectives of research and guided by the research scope.

The analysed findings of the survey are presented to the Development Panel for their review and confirmation. Thereafter, the Development Panel will proceed with the development of the Occupational Structure (OS) and Occupational Description (OD). The technique of OS development is described in section 3.4 while the OD development technique is mentioned in section 3.5 below. All the above information will be presented in the draft OF document according to the format prescribed by JPK.

3.2.3 Phase 3: Final

Review and Handover of Final OF document to Industry Stakeholders

The final draft of the OF Document is to be presented to the Review Panel at the Occupational Framework Technical Evaluation Committee meeting for their comments and approval before it is to be submitted to JPK. The details for these sessions can be referred in Table 3.2. After obtaining approval from JPK, the document will be handed over to industry stakeholders in the final session of the

research. The review and final handover session aim to finalise the OF research project by having the final meeting with industry stakeholder representatives to be briefed on the contents and findings of the research.

3.3 Chapter Summary

This chapter sets out the methodology used in the development of the OF for the Manufacture of Kenaf/ Tobacco Products. This study is using three different method of approach which are document analysis, focus group discussion, survey analysis and industry visit. The method includes the overall development process, Occupational Structure development, Occupational Description development and list of industry engagements/evaluation sessions throughout the project. As this project applies Qualitative Analysis methods to accomplish the research objectives, therefore industry engagements and interviews with industry representatives are an integral part of data collection. The research questions posed in these industry engagements have been developed to solicit the required responses in a clear and structured manner. This can be seen in Annex 3: Questionnaire. There are 30 respondents from various background of expertise in this sector had given their opinion on skill in demands and industry 4.0 in Manufacture of Kenaf/Tobacco. Next, the two session of the focus group discussion had been conducted with the expertise from this sector in order to gaining the information such as Occupational Structure and Occupational Description.

The results of this methodology such as Occupational Structure and Occupational Description development, skills in demand and etc. identified through focus group discussion and survey analysis are presented in the next chapter that is Chapter 4: Findings.

CHAPTER 4: FINDINGS

4.1 Chapter Introduction

This chapter elaborates the findings from the research works. The findings revolve around the objectives set for the study namely; to produce Occupational Structure (OS) from data analysis, interviews, site visits and focus group; to determine job descriptions of each job title from the OS; and to investigate the skills in demand in the sector.

4.2 Surveys and Questionnaires Analysis

The respondents for the surveys and questionnaires are involving 30 respondents from 9 kenaf sub-sector, the designation of the respondents ranging from HR executives to senior managers. The results of the surveys and questionnaires are presented below:

4.2.1 Section 1: Competency in Demand

This section is exploring the competency that is required by the industry. Another objective of this section is trying to figure out the skills gap and how to overcome the gap.

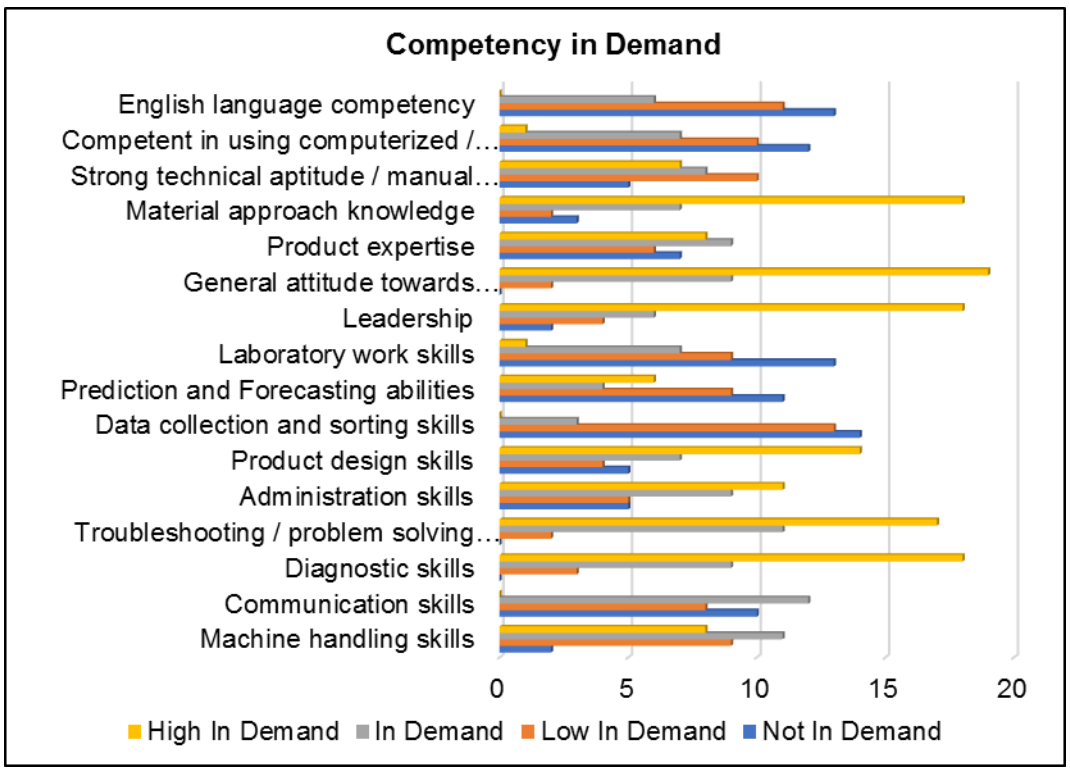

Chart 4.1: Competency in Demand

The respondents have explicitly marked the top 5 skills highly demanded by the employer are material approach knowledge, general attitude towards work, leadership, troubleshooting / problem solving and diagnostic.

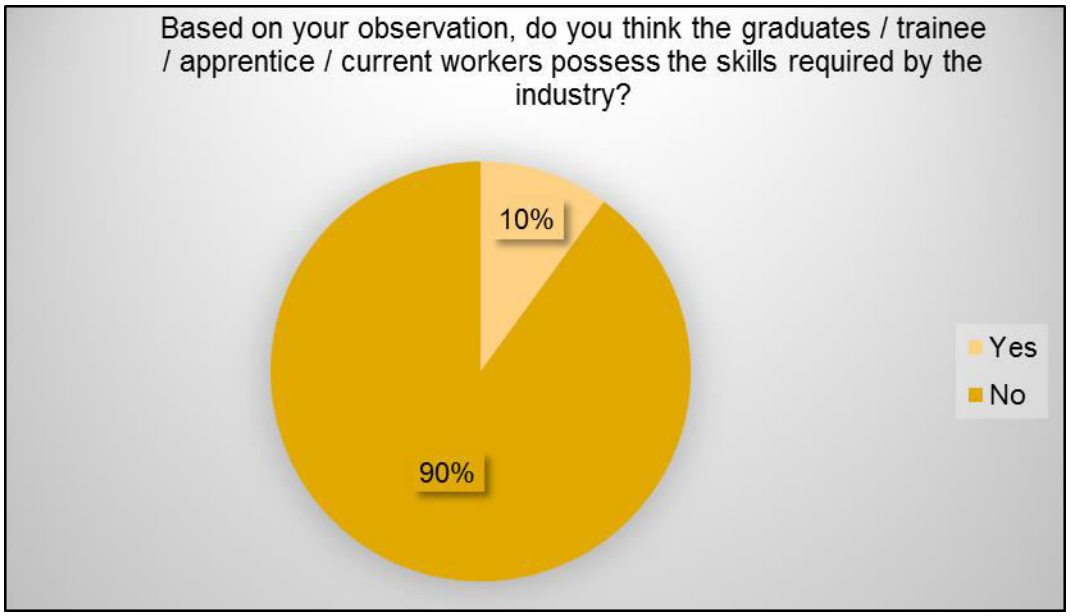

Chart 4.2: Skills Mismatch Responses

Only 10% of the respondents agreed that the graduates / trainee / apprentice / current workers do not have the required skills by the employers. The reasons for that are shown in the chart below:

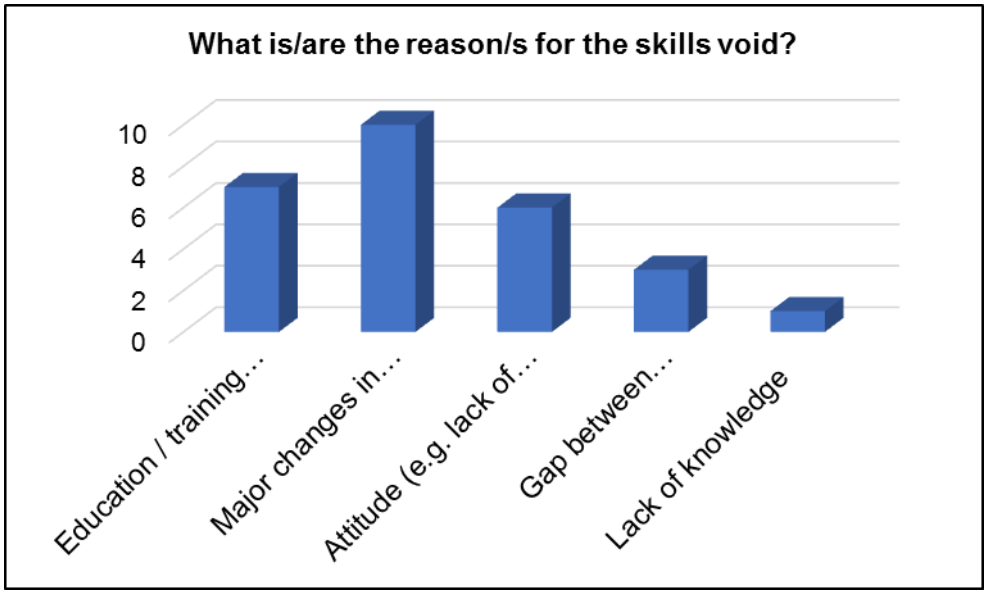

Chart 4.3: Reasons for Skills Gap

The respondents ranked major changes in traditional training and new skill requirements as the main reason for skills gap and the education / training mismatch as the second main contributing factor.

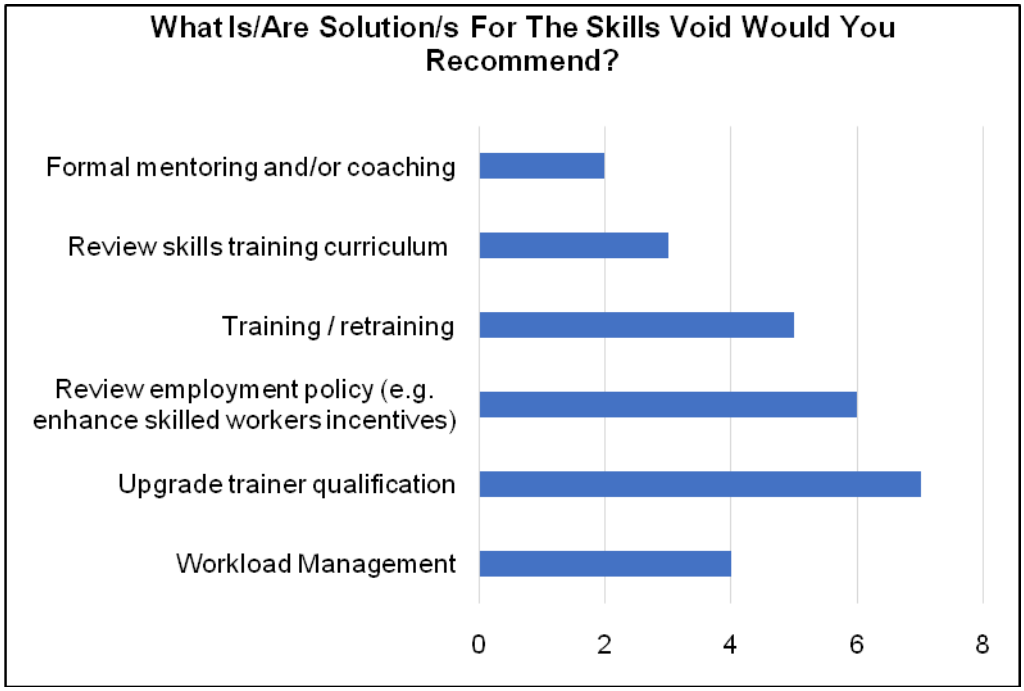

Chart 4.4: Solutions for Skills Gap

Majority of the respondents suggested that trainer qualification must be upgrade and suits the current requirements of the industry.

4.2.2 Section 2: Jobs in Demand

This section is aimed to determine which category of workers that is in shortage supply or over supply, the category is based on MASCO such as skilled workers, semi-skilled workers and low skilled workers.

Category of Skills	Description
Skilled Workers	Managers, Professionals, Technicians and Associate Professionals
Semi-Skilled Workers	Clerical Support, Service and Sales, Craft and related Trades Workers and Plant and Machine Operators and Assemblers
Low Skilled Workers	Elementary Workers

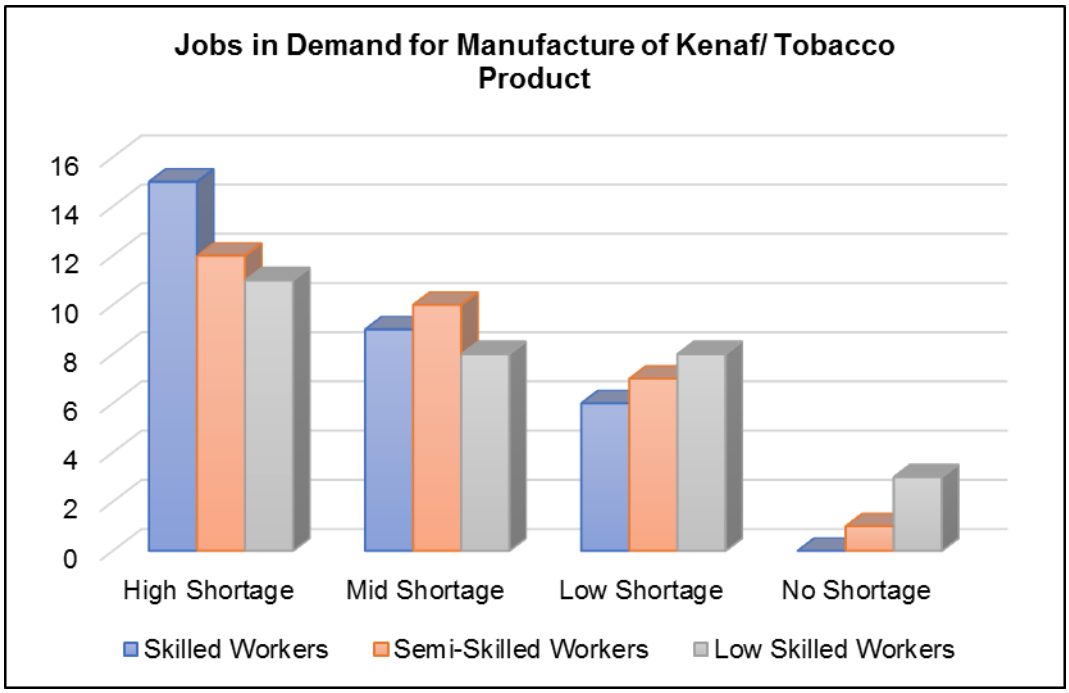

Chart 4.5: Jobs in Demand for Group 120

The skilled and semi-skilled workers for group 120 are highly in demand as the current manpower supply in short of these two groups of workers. Elementary / low skilled workers are low in demand as there is surplus of foreign workers to fill up the low skilled workers segmentation.

4.2.3 Section 3: Emerging Skills

This section is trying to determine the readiness of industry players and the workers in the advent of IR4.0. The technology drives or pillars of IR4.0 is listed and the respondents have to decide the relevancy of each elements in their line of duty.

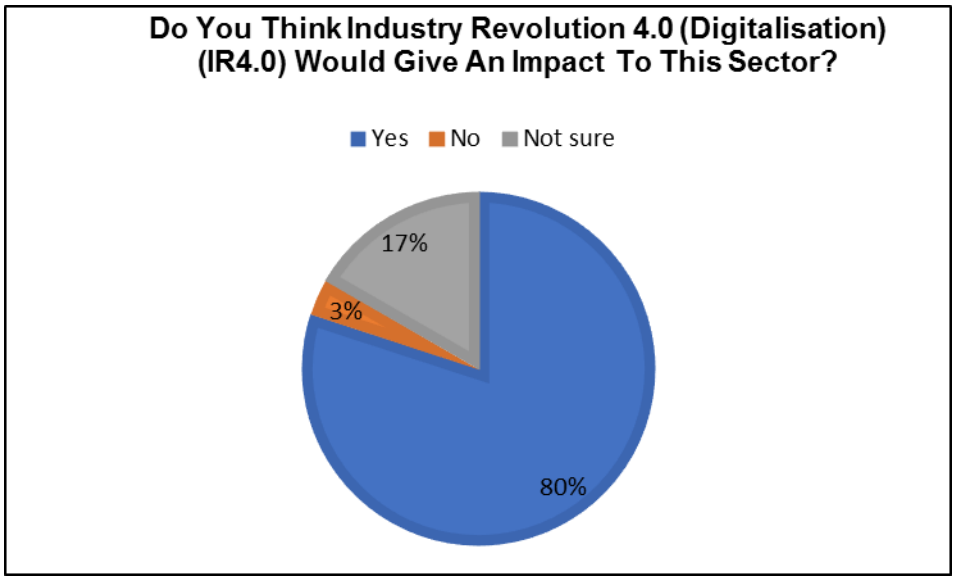

Chart 4.6: Impact of IR4.0 to The Industry

About 80% of the respondents agreed that IR4.0 would give an impact to this sector. The respondents agreed that all the 9 technology pillars would affect the manufacturing of Kenaf/Tobacco product especially for Level 4 and above as shown in Chart 4.7 below.

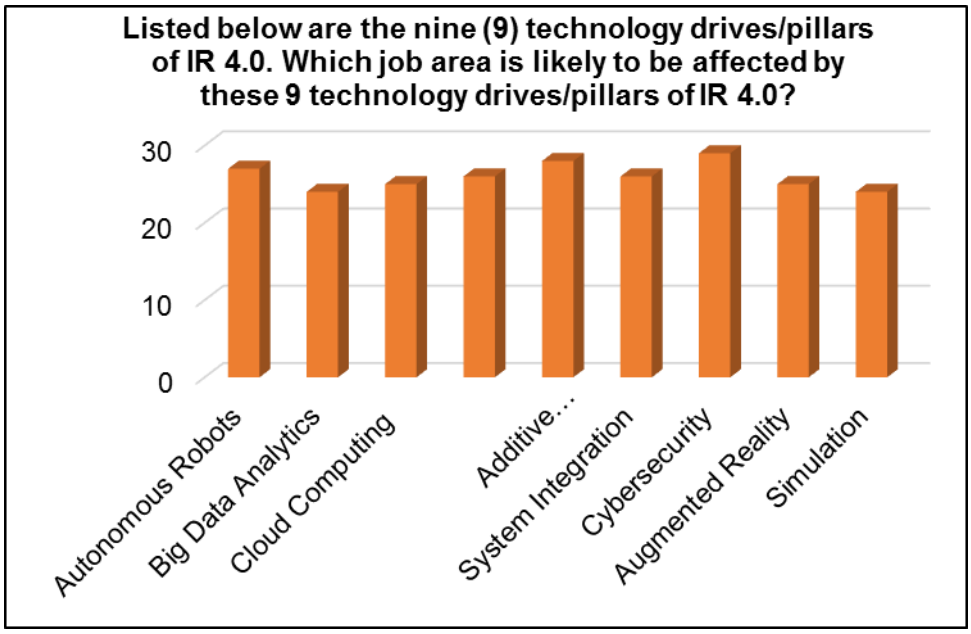

Chart 4.7: The 9 Technology Drives in Relation to the 120 Group of Job Area

Table 4.1: The description of important prerequisite and skills for workforce in the age of IR4.0 published in Skill Development for Industry 4.0 Whitepaper by Roland Berger GMBH in 2016

PREREQUISITE & SKILLS	KNOWLEDGE ABOUT ICT	ABILITY TO WORK WITH DATA	TECHNICAL KNOW-HOW	PERSONAL SKILLS
DETAILS	• Basic Information Technology knowledge • Ability to use and interact with computers and smart machines like robots, tablets etc. • Understanding machine to machine communication, IT security & data protection	• Ability to process and analyze data and information obtained from machines • Understanding visual data output & making decisions • Basic statistical knowledge	• Inter-disciplinary & generic knowledge about technology • Specialized knowledge about manufacturing activities and processes in place • Technical know-how of machines to carry out maintenance related activities	• Adaptability & ability to change • Decision making • Working in team • Communication skills • Mindset change for lifelong learning

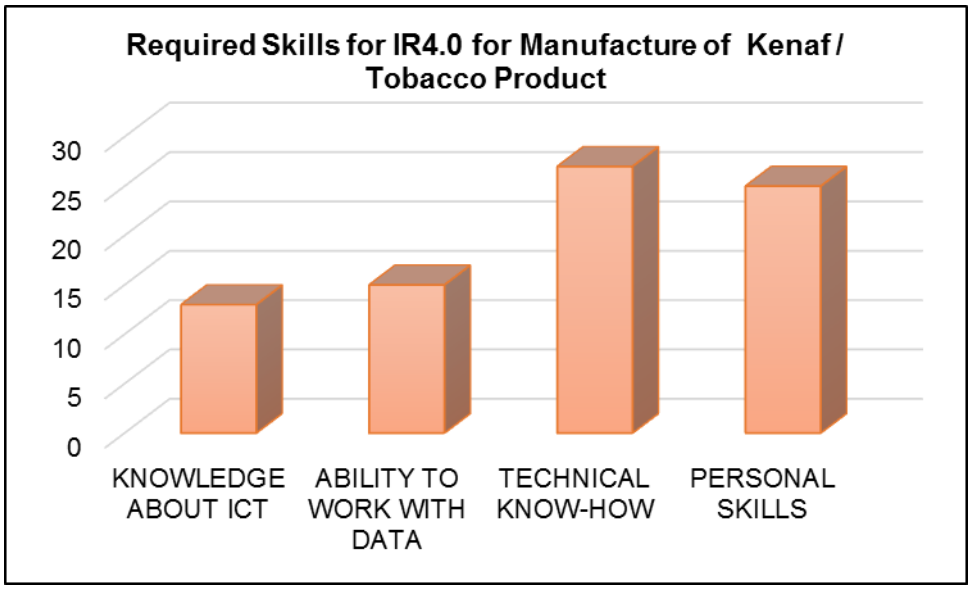

Chart 4.8: Required Skills for IR4.0 for Group 120

In order to survive in the era of IR4.0, the respondents unanimously ranked personal skills and technical know-how as the most important required skills for IR4.0.

4.2.4 Section 4: Related Issues

This section is exploring the common issues surrounding the industry. The respondents ranked the most relevant issues for the industry.

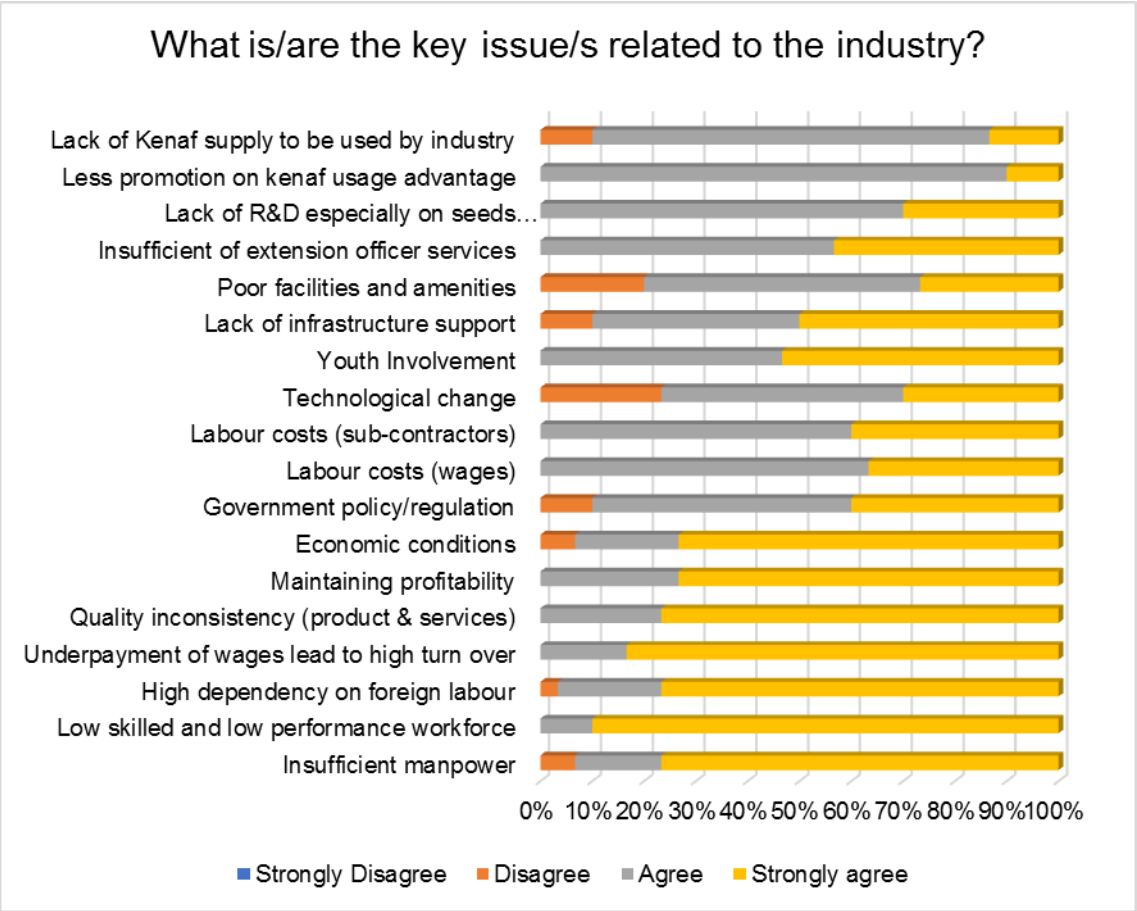

Chart 4.9: List of Key Issues Related to The Industry

4.3 Occupational Structure (OS)

Table 4.2: Group 120 Occupational Structure (1 of 10)

SECTION	(C) MANUFACTURING					
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT					
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – KENAF MAT					
Area	**Production Planning**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**	**Production Engineering**
Level 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 5	Factory Manager	Factory Manager	Factory Manager	Factory Manager	Factory Manager	Factory Manager
Level 4	Senior Store Supervisor	Production Executive*/**	Quality Control Executive*/**	Binder / Standard Officer*/**	Chargeman*/**	Chargeman*/**
Level 3	Store Supervisor	Production Supervisor	Quality Control Supervisor*	Assistant Binder	Maintenance Supervisor	Maintenance Supervisor
Level 2	Forklift Driver	Production Line Leader	Quality Control Inspector	No Level	Mechanical Technician	Electrical Technician
Level 1	No Level	Production Operator	No Level	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.3: Group 120 Occupational Structure (2 of 10)

SECTION	(C) MANUFACTURING					
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT					
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – IBS WALL PANEL					
Area	**Material & Production Planning**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**	**New Product Development**
Level 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 5	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager
Level 4	Assistant Operation Manager*/**	Assistant Operation Manager*/**	Assistant Operation Manager*/**	Engineering Assistant Manager*/**	Engineering Assistant Manager*/**	Engineering Assistant Manager*
Level 3	Store Supervisor	Production Supervisor*	Quality Control Supervisor*/**	Foreman	Draughtman*/**	Product Development Supervisor*/**
Level 2	Forklift Driver	Line Leader	Quality Control Inspector	Mechanical Technician	No Level	Product Development Assistant
Level 1	No Level	Production Operator	No Level	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.4: Group 120 Occupational Structure (3 of 10)

SECTION	(C) MANUFACTURING							
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT							
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – EXTRUSION & PULTRUSION							
Area	**Material & Production Plan**	**Production Operation**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**	**Production Engineering**	**New Product Development**
Level 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 5	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager
Level 4	Assistant Operation Manager**	Assistant Operation Manager**	Assistant Operation Manager**	Assistant Operation Manager**	Engineering Assistant Manager**	Engineering Assistant Manager**	Engineering Assistant Manager**	Engineering Assistant Manager**
Level 3	Store Supervisor	Production Supervisor Extrusion*/**	Production Supervisor Pultrusion*/**	Quality Control Supervisor*/**	Foreman	Electrical Supervisor	Binder/ Standard Officer*/**	Product Development Supervisor*
Level 2	Forklift Driver	Line Leader Extrusion	Line Leader Pultrusion	Quality Control Inspector	Mechanical Technician	Electrical Technician	Assistant Binder	Product Development Assistant
Level 1	No Level	Production Operator	Production Operator	No Level	No Level	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.5: Group 120 Occupational Structure (4 of 10)

SECTION	(C) MANUFACTURING					
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT					
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – BIODEGRADABLE UTENSILS (BDU)					
Area	**Production Planning**	**Production Operation**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**
Level 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Level 5	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager
Level 4	Production Planning Executive	Production Executive*/**	Production Executive*/**	Quality Control Executive*/**	Maintenance Executive	Maintenance Executive
Level 3	Store Supervisor	Production Supervisor – Pulp*/**	Production Supervisor – Utensil*/**	Quality Control Supervisor*	Maintenance Supervisor - Mechanical	Maintenance Supervisor - Electrical
Level 2	Forklift Driver	Line Leader – Pulp	Line Leader – Utensil	Quality Control Inspector	Mechanical Technician	Electrical Technician
Level 1	No Level	Production Operator	Production Operator	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.6: Group 120 Occupational Structure (5 of 10)

SECTION	(C) MANUFACTURING		
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT		
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – ANIMAL FOOD PELLET		
Area	**Material Control**	**Production Operation**	**Quality Control**
Level 8	Not Available	Not Available	Not Available
Level 7	Not Available	Not Available	Not Available
Level 6	Not Available	Not Available	Not Available
Level 5	Factory Manager	Factory Manager	Factory Manager
Level 4	Production Executive*/**	Production Executive*/**	Animal Food Nutritionist*/**
Level 3	Store Supervisor	Production Supervisor*	Assistant Food Nutritionist
Level 2	Forklift Driver	Machine Operator	No Level
Level 1	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.7: Group 120 Occupational Structure (6 of 10)

SECTION	(C) MANUFACTURING		
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT		
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – FIBRE & CORE (MECHANICAL)		
Area	**Material Control**	**Production Operation**	**Quality Control**
Level 8	Not Available	Not Available	Not Available
Level 7	Not Available	Not Available	Not Available
Level 6	Not Available	Not Available	Not Available
Level 5	Factory Manager	Factory Manager	Factory Manager
Level 4	Assistant Factory Manager*/**	Assistant Factory Manager*/**	Assistant Factory Manager*/**
Level 3	Store Supervisor	Production Supervisor*	Quality Control Supervisor*
Level 2	Forklift Driver	Machine Operator	No Level
Level 1	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.8: Group 120 Occupational Structure (7 of 10)

SECTION	(C) MANUFACTURING
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT
GROUP	(120) MANUFACTURE OF KENAF /TOBACCO PRODUCT – FIBRE & CORE (BIO–RETTING)
Area	**Production Operation**
Level 8	Not Available
Level 7	Not Available
Level 6	Not Available
Level 5	Factory Manager
Level 4	Assistant Operation Manager*/**
Level 3	Production Supervisor*
Level 2	Bio–Retting Operator
Level 1	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.9: Group 120 Occupational Structure (8 of 10)

SECTION	(C) MANUFACTURING	
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT	
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – KENAF SEED	
Area	**Production Operation**	**Quality Control**
Level 8	Not Available	Not Available
Level 7	Not Available	Not Available
Level 6	Not Available	Not Available
Level 5	Factory Manager	Factory Manager
Level 4	Assistant Factory Manager*/**	Assistant Factory Manager*/**
Level 3	Production Supervisor	Laboratory Assistant*/**
Level 2	Factory Operator	Laboratory General Worker
Level 1	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.10: Group 120 Occupational Structure (9 of 10)

SECTION	(C) MANUFACTURING
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – ANIMAL BEDDING
Area	**Production Operation**
Level 8	Not Available
Level 7	Not Available
Level 6	Not Available
Level 5	Factory Manager
Level 4	Assistant Operation Manager*/**
Level 3	Production Supervisor*
Level 2	Animal Bedding Operator
Level 1	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.11: Group 120 Occupational Structure (10 of 10)

SECTION	(C) MANUFACTURING		
DIVISION	(12) MANUFACTURE OF KENAF/ TOBACCO PRODUCT		
GROUP	(120) MANUFACTURE OF KENAF/ TOBACCO PRODUCT – TOBACCO AND CIGAR		
Area	**Tobacco Post-Harvest Operation**	**Tobacco Post-Harvest Operation**	**Tobacco Special Product**
Level 8	Not Available	Not Available	Not Available
Level 7	Not Available	Not Available	Not Available
Level 6	Not Available	Not Available	Not Available
Level 5	Not Available	Not Available	Cigar Specialist (Leaf Cigarette) **
Level 4	Station Manager	Station Manager	Assistant Specialist
Level 3	Station Supervisor	Station Supervisor	No Level
Level 2	General Worker	Durable House Guard	No Level
Level 1	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.12: Summary of Job Titles

No	Job Area	Level								Total Identified Job Titles
		1	2	3	4	5	6	7	8	
120 – Manufacture of Kenaf/Tobacco Product (Kenaf Mat)										
1	Production Planning	NL	1	1	1	1	NA	NA	NA	17
2	Production Operation	1	1	1	1		NA	NA	NA	
3	Quality Control	NL	1	1	1		NA	NA	NA	
4	Production Engineering	NL	NL	1	1		NA	NA	NA	
		NL	1	1	1		NA	NA	NA	
		NL	1				NA	NA	NA	
120 – Manufacture of Kenaf/Tobacco Product (IBS Wall Panel)										
1	Material & Production Planning	NL	1	1	1	1	NA	NA	NA	15
2	Production Operation	1	1	1			NA	NA	NA	
3	Quality Control	NL	1	1			NA	NA	NA	
4	Production Engineering	NL	1	1	1		NA	NA	NA	
		NL	NL	1			NA	NA	NA	

No	Job Area	Level								Total Identified Job Titles
		1	2	3	4	5	6	7	8	
5	New Product Development	NL	1	1			NA	NA	NA	
120 – Manufacture of Kenaf/Tobacco Product (Extrusion & Pultrusion)										
1	Material & Production Planning	NL	1	1	1	1	NA	NA	NA	21
2	Production Operation	1	1	1			NA	NA	NA	
		1	1	1			NA	NA	NA	
3	Quality	NL	1	1			NA	NA	NA	
4	Engineering	NL	1	1	1		NA	NA	NA	
		NL	1	1			NA	NA	NA	
		NL	1	1			NA	NA	NA	
5	R&D Product	NL	1	1			NA	NA	NA	
120 – Manufacture of Kenaf/Tobacco Product (Biodegradable Utensils – BDU)										
1	Production Planning	NL	1	1	1	1	NA	NA	NA	19
2	Production Operation	1	1	1	1		NA	NA	NA	
		1	1	1			NA	NA	NA	
3	Quality Control	NL	1	1	1		NA	NA	NA	
4	Engineering	NL	1	1	1		NA	NA	NA	

No	Job Area	Level								Total Identified Job Titles
		1	2	3	4	5	6	7	8	
		NL	1	1			NA	NA	NA	
120 – Manufacture of Kenaf/Tobacco Product (Animal Food Pellet)										
1	Material Control	NL	1	1	NL	1	NA	NA	NA	8
2	Production Operation	NL	1	1	1		NA	NA	NA	
3	Quality Control	NL	NL	1	1		NA	NA	NA	
120 – Manufacture of Kenaf/Tobacco Product (Fibre & Core – Mechanical)										
1	Material Control	NL	1	1	1	1	NA	NA	NA	8
2	Production Operation	NL	1	1	1		NA	NA	NA	
3	Quality Control	NL	NL	1			NA	NA	NA	
120 – Manufacture of Kenaf/Tobacco Product (Fibre & Core – Bio-Retting)										
1	Operating Management	NL	1	1	1	1	NA	NA	NA	4

No	Job Area	Level								Total Identified Job Titles
		1	2	3	4	5	6	7	8	
120 – Manufacture of Kenaf/Tobacco Product (Kenaf Seed)										
1	Operating Management	NL	1	1	1	1	NA	NA	NA	6
2	Quality Control	NL	1	1			NA	NA	NA	
120 – Manufacture of Kenaf/Tobacco Product (Animal Bedding)										
1	Production Operation	NL	1	1	1	1	NA	NA	NA	4
Grand Total of Identified Job Titles										**102**

4.4 Table of Job Responsibilities (Area Description)

Division : C – 12 Manufacture of Kenaf/Tobacco Product

Group : 120 Manufacture of Kenaf/Tobacco Product

Table 4.13: List of Responsibilities for Group 120 (Kenaf Mat) (1 of 2)

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	**Factory Manager** 1) Determine distribution of Kenaf mat on demand 2) Make sure the delivery made as requested 3) Update Thermo-bonding information process 4) Regulate the operation of the factory 5) Provides annual operation plans 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water Company) 9) Maintain good relationships with	**Factory Manager** 1) Determine distribution of Kenaf mat on demand 2) Make sure the delivery is made as requested 3) Update Thermo-bonding information process 4) Regulate the operation of the factory 5) Provides operation plans 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water Company) 9) Maintain good relationships with	**Factory Manager** 1) Determine distribution of Kenaf mat on demand 2) Make sure the delivery made as requested 3) Update Thermo-bonding information process 4) Regulate the operation of the factory 5) Provides operation plans 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water Company) 9) Maintain good relationships with

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
	machine supplier and customers 10) Prepare operation Yearly budget	machine supplier and customers 10) Prepare operation Yearly budget	machine supplier and customers 10) Prepare operation Yearly budget
Level 4	**Senior Store Supervisor** 1) Organize and distribute staff schedules 2) Maintain inventory and review items are in stock 3) Complete store administration and review compliance with policies and procedures 4) Deal with all issues that arise from staff or customers (complaints, grievances etc.) 5) Maintain health and safety measures and store's cleanliness 6) Make distribution based on production requirements 7) Provide periodic reports to factory managers 8) Ensure FIFO implementation for all material and consumables 9) Verify stock take report	**Production Executive** 1) Verify Thermo-bonding process flow and control of parameter setting 2) Verify Bonding mixture comply to the specification 3) Coordination of work activities with quality control departments, production plan departments and production engineering departments 4) Provide daily operations reports to the operation manager 5) Determine machine / store operation requirements and equipment 6) Do report and analysis for improvements (product and process) 7) Carries out factory equipment verification work 8) Arrange maintenance of equipment and machines	**Quality Control Executive** 1) Verify Themo-bonding quality inspection flow and reference/ specification 2) Review Kenaf mat quality level as the customer needs 3) Review the Bonding agent, fiber and core mixing rate does not exceed the specified level 4) Review that kenaf mat free from foreign material. 5) Provide monthly quality report to assistant manager 6) Coordinate quality improvement plan. 7) Verify physical and mechanical tests on Kenaf mat (Strength, Dimensional, Cleanliness) 8) Ensure QMS requirement are met (ISO, OHSAS etc.) 9) Analyze quality data for Kenaf mat quality improvement.

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
Level 3	**Store Supervisor** 1) Reviewing the store situation is in good condition 2) Organizing items in the store 3) Review the store adheres to the Store Management Procedure 4) Perform stock/ store inventory 5) Review store needs are always sufficient 6) Provide basic requirements for store operations (masks, sacks, shoes) 7) Records chemical break-in data according to production requirements 8) Reviewing the storage of chemicals according to MSDS 9) Storage and distribution of Kenaf mat according to specified guidelines 10) Review FIFO for parts and consumable implement	**Production Supervisor** 1) Reviewing the machine is always in good condition and ready for operation 2) Determine machine parameter settings (control panel) according to operating standards 3) Confirm Bonding agent mixture comply to specification 4) Establish the Kenaf mat handling procedure 5) Give assistance to solve operation issues 6) Determine the need for periodic maintenance of the machine 7) Determine the workforce requirements for each section 8) Preparing activity report according to shift 9) Conducting a preliminary discussion before the start of the shift 10) Updating the logbook for the next shift 11) Update production report to Executive	**Quality Control Supervisor** 1) Verify Kenaf mat quality report 2) Verify the Kenaf mat Bonding mixture as specification 3) Conducting product quality tests (humidity, strength, durability, dimensional) 4) Examine processing water and wastewater 5) Provide Monthly report to QC executive 6) Review measuring and equipment tools are calibrated 7) Interacts with other departments to review compliance with specification and to facilitate the acceptance of parts

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
Level 2	**Forklift Driver** 1) Reviewing Lifting machinery is in good condition 2) Handles machinery as manufacture recommendations 3) Store the Kenaf mat in the designated place 4) Transport Kenaf mat to lorries to ship to buyers 5) Arrange periodic maintenance requirements of lifting machinery	**Production Line Leader** 1) Follow all good manufacturing practices (GMP's) as SOP 2) Monitor and track progress of production status 3) Review operators comply with chemical use requirements (as MSDS/SDS) 4) Review the machine parameters (temperature, speed and pressure etc.) within the prescribed limit 5) Get QC approval before run full process. 6) Review the use of PPE to all employees 7) Review all production machinery operated smoothly 8) Report to supervisor for any abnormalities	**Quality Control Inspector** 1) Performs verification on Incoming, In-Process, and Outgoing products. 2) Visually compares work pieces against one another to assess/ detect manufacturing variations in processes. 3) Check the Bonding agent mixture within specification 4) Assists and/or trains operators on part visual acceptability, and measurement and process procedures as required. 5) Reports quality problems or findings to Quality Control Supervisor 6) Follows up to review that corrective action on issue of Kenaf mat quality are taken care 7) Maintains quality records of inspections and prepares list of defects. 8) Confirm the measuring equipment calibration status is still valid

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
Level 1	NO LEVEL	**Production Operator** 1) Receive raw materials (kenaf fiber, coconut fiber, palm fiber, cotton, etc.) from store 2) Do an initial check 3) Organize raw materials for processing 4) Performs processing work as SOP 5) Handle Kenaf mat as SOP 6) Send goods to Forklift driver 7) Adhere PPE (glove, mask, safety shoes etc.) usage as manufacturing practices	NO LEVEL

Table 4.14: List of Responsibilities for Group 120 (Kenaf Mat) (2 of 2)

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	**Factory Manager** 1) Determine distribution of kenaf mat on demand 2) Make sure the delivery made as requested 3) Update Thermo-bonding information process 4) Regulate the operation of the factory 5) Provides annual operation plans 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water	**Factory Manager** 1) Determine distribution of kenaf mat on demand 2) Make sure the delivery made as requested 3) Update Thermo-bonding information process 4) Regulate the operation of the factory 5) Provides annual operation plans 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water	**Factory Manager** 1) Determine distribution of kenaf mat on demand 2) Make sure the delivery made as requested 3) Update Thermo-bonding information process 4) Regulate the operation of the factory 5) Provides annual operation plans 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	Company) 9) Maintain good relationships with machine supplier and customers 10) Prepare operation Yearly budget	Company) 9) Maintain good relationships with machine supplier and customers 10) Prepare operation Yearly budget	Company) 9) Maintain good relationships with machine supplier and customers 10) Prepare operation Yearly budget
Level 4	**Binder / Standard Officer** 1) Setting up material formulation for product specification (natural fiber, palm, chemical - PE, PP etc.) 2) Make sure the formulation does not have side effect on the user and less impact to environment 3) Establishing a quality manual (SOP) for a formulation / product (with permissible tolerance) 4) Carry out a list of materials needed for production purposes 5) Comply with all rules and regulations for production purposes (Chemical Department, Poison Control Act etc.) 6) Keep up with the new binder technology 7) Communicate with the quality control department, operating department and store department for specification updates	**Chargeman** 1) Review the (electrical related) safety of the workers before, during and after completion of the assigned jobs 2) Review all related electrical supply are dead, discharge and earthed/lock throughout the works period and the working area and or equipment are safe to works 3) Enforce all safety procedures on electrical related tasks are followed, proper tools are used, PPE are used and methods of handling of works are adhered 4) Conduct “tool box talk” (safety briefing) before any job started with related to electricity 5) Arrange for mechanical & electrical equipment’s such as preventive maintenance, predictive maintenance, repair maintenance and building	**Chargeman** 1) Review the (electrical related) safety of the workers before, during and after completion of the assigned jobs 2) Review all related electrical supply are dead, discharge and earthed/lock throughout the works period and the working area and or equipment are safe to works 3) Enforce all safety procedures on electrical related tasks are followed, proper tools are used, PPE are used and methods of handling of works are adhered 4) Conduct “tool box talk” (safety briefing) before any job started with related to electricity 5) Arrange for mechanical & electrical equipment’s such as preventive maintenance, predictive maintenance, repair maintenance and building

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	8) Perform data retrieval and analysis for part and process improvements 9) Make literature review for new product development 10) Confirm the memo (SOP) provided by the assistant binder 11) Pursue approval from related bodies (SIRIM, Fire department, etc.)	maintenance as prescheduled 6) Lead troubleshooting & modification of mechanical & electrical equipment's to maintain running condition at all time 7) Carry out periodical inspection to electrical equipment and report to Suruhanjaya Tenaga (ST)	maintenance as prescheduled 6) Lead troubleshooting & modification of mechanical & electrical equipment's to maintain running condition at all time 7) Carry out periodical inspection to electrical equipment and report to Suruhanjaya Tenaga (ST)
Level 3	**Assistant Binder** 1) Performing the operation test on new formula 2) Provide machines, tools and materials for testing 3) Adjust the test (trial machine) to the new developed material/ mixture 4) Prepare sample for approval from related bodies (SIRIM, Fire department, etc.) 5) Prepare draft memo (specification) and get confirmation from Binder 6) Provide training to supervisors and line leaders for newly developed materials 7) Review adequate binder requirements for product development (R&D)	**Maintenance Supervisor** 1) Prepare PM schedule 2) Arrange for machine/ facilities inspection/ repair 3) Maintains systems and equipment 4) Meets maintenance operational standards by contributing maintenance information to strategic plans and reviews 5) Evaluates functionality and reliability of machine, facility systems and associated equipment 6) Maintains and improves function and reliability of facility systems and associated equipment 7) Maintains safe and healthy work	**Maintenance Supervisor** 1) Prepare PM schedule 2) Arrange for machine/ facilities inspection/ repair 3) Maintains systems and equipment 4) Meets maintenance operational standards by contributing maintenance information to strategic plans and reviews 5) Evaluates functionality and reliability of machine, facility systems and associated equipment 6) Maintains and improves function and reliability of facility systems and associated equipment 7) Maintains safe and healthy work

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	purposes	environment 8) Review tool and equipment are in good condition for production	environment 8) Review tool and equipment are in good condition for production
Level 2	NO LEVEL	**Mechanical Technician** 1) Carry out maintenance of equipment and machines 2) Supervise production line equipment maintenance on shift 3) Lead the equipment ramp up and conversion to support production 4) Provide technical support to equipment 5) Handle hardware and software related issue 6) Conduct training on equipment operation and maintenance 7) Perform trouble shooting for machine and equipment	**Electrical Technician** 1) Install, maintain and troubleshoot wiring, control, and lighting systems and electrical problems 2) Inspect electrical components, such as transformers and circuit breakers 3) Rectify electrical problems with a variety of testing devices 4) Repair or replace wiring, equipment, or fixtures using hand tools and power tools 5) Follow state and local building regulations based on the National Electric Code 6) Maintain and repair motors, equipment, and control systems
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

Table 4.15: List of Responsibilities for Group 120 (IBS Wall Panel) (1 of 2)

Area	Material & Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<u>**Operation Manager**</u> 1) Determine distribution of IBS panel on demand 2) Update on latest binding and building construction technology 3) Update on Kenaf growing status 4) Make sure the delivery made as requested 5) Regulate the operation of the factory 6) Provides annual operation plans 7) Preparing monthly reports 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA,	<u>**Operation Manager**</u> 1) Determine distribution of IBS panel on demand 2) Update on latest binding and building construction technology 3) Update on Kenaf growing status 4) Make sure the delivery made as requested 5) Regulate the operation of the factory 6) Provides annual operation plans 7) Preparing monthly reports 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA,	<u>**Operation Manager**</u> 1) Determine distribution of IBS panel on demand 2) Update on latest binding and building construction technology 3) Update on Kenaf growing status 4) Make sure the delivery made as requested 5) Regulate the operation of the factory 6) Provides annual operation plans 7) Preparing monthly reports 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA,

Area	Material & Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
	SOCSO, EPF, TNB, State Water Company) 10) Maintain good relationships with machine supplier and customers 11) Prepare operation Yearly budget	SOCSO, EPF, TNB, State Water Company) 10) Maintain good relationships with machine supplier and customers 11) Prepare operation Yearly budget	SOCSO, EPF, TNB, State Water Company) 10) Maintain good relationships with machine supplier and customers 11) Prepare operation Yearly budget
Level 4	**Assistant operation manager** 1) Verify the IBS panel manufacturing processes 2) Verify IBS panel quality testing procedure and report 3) Confirm the delivery of Kenaf core, Binder, Filler and other material/ parts 4) Coordination of work activities with quality control supervisors, machine supervisors and store supervisors 5) Provide managerial reports daily operations 6) Determine machine / store operation requirements and equipment 7) Carries out factory equipment verification work 8) Review maintenance of equipment and machines perform as plan 9) Review machine, equipment, storage	**Assistant operation manager** 1) Verify the IBS panel manufacturing processes 2) Verify IBS panel quality testing procedure and report 3) Confirm the delivery of Kenaf core, Binder, Filler and other material/ parts 4) Confirm Kenaf Crete and Frame are in good condition as specification 5) Coordination of work activities with quality control supervisors, machine supervisors and store supervisors 6) Provide managerial reports daily operations 7) Do analysis and improvement (product and process) 8) Determine machine / store operation requirements and equipment 9) Carries out factory equipment	**Assistant operation manager** 1) Verify the IBS panel manufacturing processes 2) Verify IBS panel quality testing procedure and report 3) Confirm the delivery of Kenaf core, Binder, Filler and other material/ parts 4) Coordination of work activities with quality control supervisors, machine supervisors and store supervisors 5) Provide managerial reports daily operations 6) Determine machine / store operation requirements and equipment 7) Carries out factory equipment verification work 8) Review maintenance of equipment and machines perform as plan 9) Review machine, equipment, storage

Area	Material & Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
	area, QC laboratory adequate for operation 10) Generate production plan as customer demand	verification work 10) Review maintenance of equipment and machines perform as plan 11) Review machine, equipment, storage area, QC laboratory adequate for operation 12) Generate production plan as customer demand	area, QC laboratory adequate for operation 10) Ensure QMS requirement are met (ISO, OHSAS, etc.) 11) Generate production plan as customer demand
Level 3	**Store Supervisor** 1) Review the store adheres to the Store Management Procedure 2) Perform stock/store inventory 3) Review material and consumables are always sufficient 4) Provide basic requirements for store operations (masks, sacks, shoes) 5) Provide periodic reports to assistant managers 6) Records chemical break-in data according to production requirements 7) Reviewing the storage of chemicals according to MSDS/ SDS 8) Storage and distribution according to specified guidelines	**Production Supervisor** 1) Reviewing the machine is always in good condition and ready for operation 2) Verify Kenaf Crete and Frame are in good condition as specification 3) Give assistance to solve operation issues. 4) Review material mixing (Binder, Filler etc.) comply to specification 5) Review inspection and checking perform as SOP 6) Determine the workforce requirements for each section 7) Preparing activity report according to shift 8) Determine machine settings (control	**Quality Control Supervisor** 1) Verify the material mixing (Binder, Filler etc.) as specification 2) Verify product quality tests (dimensional, strength, durability, thickness) 3) Review wall panel production within specification 4) Review the level of wall panel strength and thickness as required by the buyer 5) Provide report to assistant operation manager 6) Arrange physical and mechanical tests on wall panel (strength, thickness, cleanliness) 7) Review that the wall panel mixing rate does not exceed the specified level

Area	Material & Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
	9) Review FIFO implemented at store operation	panel) according to operating standards 9) Conducting a preliminary discussion before the start of the shift 10) Updating the logbook for the next shift	8) Review binding used as stated in specification
Level 2	**Forklift Driver** 1) Reviewing Lifting machinery is in good condition 2) Handles machinery as manufacture recommendations 3) Store the IBS panel in the designated place – to prevent scratch/ damage 4) Transport IBS panel to lorries to ship to buyers 5) Arrange periodic maintenance requirements of lifting machinery	**Line Leader** 1) Follow all good manufacturing practices (GMP's) as SOP 2) Adhere material mixture (Binder, Filler kenaf core etc.) as specified at specification 3) Review Kenaf Crete and Frame are in good condition as specification. 4) Get QC approval before run full process 5) Monitor and track progress of production status 6) Review operators comply with chemical use requirements (as MSDS/SDS) 7) Review the machine parameters (temperature, speed and pressure etc.) within the prescribed limit 8) Review the use of PPE to all employees 9) Report to supervisor for any abnormalities	**Quality Control Inspector** 1) Performs verification on Incoming, In-Process, and Outgoing products 2) Visually compares work pieces against one another to assess/ detect manufacturing variations in processes 3) Verify material mixture (Binder, Filler, kenaf core etc.) conform as specification 4) Perform product quality tests (dimensional, strength, durability, thickness) 5) Assists and/or trains operators on part visual acceptability, and measurement and process procedures as required 6) Reports quality problems or findings to Quality Control Supervisor 7) Follows up to review that corrective action on issue of IBS panel quality are taken care 8) Maintains quality records of inspections

Area	Material & Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
			and prepares list of defects 9) Confirm the measuring equipment calibration status is still valid
Level 1	NO LEVEL	**<u>Production Operator</u>** 1) Receive raw materials (Binder, cement, frame etc.) from store 2) Do an initial check 3) Organize raw materials for processing 4) Performs processing work as SOP 5) Send goods to Forklift driver 6) Adhere PPE (Safety helmet, safety shoes, glove, apron) usage as manufacturing practices	NO LEVEL

Table 4.16: List of Responsibilities for Group 120 (IBS Wall Panel) (2 of 2)

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	**Operation Manager** 1) Determine distribution of IBS panel on demand 2) Update on latest binding and building construction technology 3) Update on Kenaf growing status 4) Make sure the delivery made as requested 5) Regulate the operation of the factory 6) Provides annual operation plans 7) Preparing monthly reports 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA,	**Operation Manager** 1) Determine distribution of IBS panel on demand 2) Update on latest binding and building construction technology 3) Update on Kenaf growing status 4) Make sure the delivery made as requested 5) Regulate the operation of the factory 6) Provides annual operation plans 7) Preparing monthly reports 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA,	**Operation Manager** 1) Determine distribution of IBS panel on demand 2) Update on latest binding and building construction technology 3) Update on Kenaf growing status 4) Make sure the delivery made as requested 5) Regulate the operation of the factory 6) Provides annual operation plans 7) Preparing monthly reports 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA,

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes
	SOCSO, EPF, TNB, State Water Company) 10) Maintain good relationships with machine supplier and customers 11) Prepare operation Yearly budget	SOCSO, EPF, TNB, State Water Company) 10) Maintain good relationships with machine supplier and customers 11) Prepare operation Yearly budget	SOCSO, EPF, TNB, State Water Company) 10) Maintain good relationships with machine supplier and customers 11) Prepare operation Yearly budget
Level 4	**Engineering Assistant Manager** 1) Control and monitoring cost expenses 2) Lead process improvement for cost down 3) Communicate with the quality control department, operating department and store department for equipment and machine maintenance 4) Prepare equipment and machine maintenance schedule 5) Continue good communication with machine maker 6) Verify machine maintenance 7) Review design facilities are updated for IBS panel drawing generation 8) Provide basic measurement of new introduce IBS panel to Draughtsman 9) Approve design/ drawing for new introduce IBS panel	**Engineering Assistant Manager** 1) Control and monitoring cost expenses 2) Lead process improvement for cost down 3) Communicate with the quality control department, operating department and store department for equipment and machine maintenance 4) Prepare equipment and machine maintenance schedule 5) Continue good communication with machine maker 6) Verify machine maintenance 7) Review design facilities are updated for IBS panel drawing generation 8) Provide basic measurement of new introduce IBS panel to Draughtsman 9) Approve design/ drawing for new introduce IBS panel	**Engineering Assistant Manager** 1) Control and monitoring cost expenses especially for new developed product 2) Coordinate and release new IBS panel product 3) Update new technology on IBS panel binding 4) Establish a quality specification (SOP) for an IBS panel (with permissible tolerance) 5) Keep up with the new binder technology 6) Communicate with the quality control department, operating department and store department for specification updates 7) Confirm the memo (SOP) provided by Prod development supervisor 8) Obtain approval and certification from related agencies (SIRIM, Fire

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes
	10) Preparing an analysis report on improvement (product and process)	10) Preparing an analysis report on improvement (product and process)	department, CIDB, Local Authorities etc.) 9) Confirm the mixture (Binder, Filler, Kenaf core etc.)
Level 3	**Foreman** 1) Prepare PM schedule 2) Arrange for machine/ facilities inspection/ repair 3) Maintains systems and equipment 4) Meets maintenance operational standards by contributing maintenance information to strategic plans and reviews 5) Evaluates functionality and reliability of machine, facility systems and associated equipment 6) Maintains and improves function and reliability of machine, facility systems and associated equipment 7) Review all spare parts are available and ready to use 8) Review tool and equipment are in good condition for production	**Draughtman** 1) Evaluate IBS panel description and specifications from engineering assistant manager 2) Interpret building construction drawing 3) Draw an IBS panel technical drawing/ plan according to the designated size 4) Print the drawing/plan and seek approval 5) Revise technical drawing to meet IBS panel matching and assembly 6) Compiling and updating completed drawings 7) Review the design software used is up to date and valid 8) Maintain design tools are in good order	**Product Development Supervisor** 1) Arrange the making of IBS panel samples (prototypes) with other section 2) Arrange improvement existing products – on strength or reduce cost 3) Review adequate material and equipment for IBS panel sample making 4) Provide the list of ingredients (cement, binder, filler, core fiber, etc.) needed for production purposes 5) Arrange IBS panel matching and assembly at main panel 6) Perform data retrieval and analysis for IBS panel improvements

Area	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes
	9) Maintaining compliance with established policies and procedures		
Level 2	**<u>Mechanical Technician</u>** 1) Carry out maintenance and repair of equipment and machines 2) Review Kenaf Crete and frame are in good order 3) Supervise production line equipment maintenance on shift 4) Lead the equipment ramp up and conversion to support production 5) Provide technical support to equipment 6) Handle Hardware and software related issue 7) Conduct training on equipment operation and maintenance to production staff	NO LEVEL	**<u>Product Development Assistant</u>** 1) Prepare equipment for IBS panel sample making purposes 2) Conduct quality control tests for new IBS panel (strength, thickness etc.) 3) Submit test results to Prod development supervisor 4) Reviewing the need for laboratory apparatus is adequate 5) Reviewing equipment is working properly 6) Review laboratory safety is in good condition
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

Table 4.17: List of Responsibilities for Group 120 (Extrusion & Pultrusion) (1 of 3)

Area	Material & Production Plan Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	**Operation Manager** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget	**Operation Manager** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget	**Operation Manager** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget

Area	Material & Production Plan Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
	9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)
Level 4	**Assistant Operation Manager** 1) Verify the process flow, operation parameter setting and quality testing procedure for Extrusion and Pultrusion process 2) Make order of Binding agent, Resin matrix and other consumable items 3) Update supplier performance delivery status 4) Coordination of work activities with quality control supervisors, machine supervisors and store supervisors 5) Provide managerial reports daily operations 6) Determine machine / store operation requirements and equipment 7) Carries out factory equipment verification work 8) Review maintenance of equipment and	**Assistant Operation Manager** 1) Verify the process flow, operation parameter setting and quality testing procedure for Extrusion and Pultrusion process 2) Update supplier performance delivery status 3) Coordination of work activities with quality control supervisors, machine supervisors and store supervisors 4) Provide managerial reports daily operations 5) Carries out factory equipment verification work 6) Initiate improvement activity (for product and process) 7) Review maintenance of equipment and machines perform as plan 8) Review machine, equipment, storage	**Assistant Operation Manager** 1) Verify the process flow, operation parameter setting and quality testing procedure for Extrusion and Pultrusion process 2) Update supplier performance delivery status 3) Coordination of work activities with quality control supervisors, machine supervisors and store supervisors 4) Provide managerial reports daily operations 5) Carries out factory equipment verification work 6) Initiate improvement activity (for product and process) 7) Review maintenance of equipment and machines perform as plan 8) Review machine, equipment, storage

Area	Material & Production Plan Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
	machines perform as plan 9) Review machine, equipment, storage area, QC laboratory adequate for parts checking, inspection and verification 10) Generate production plan as customer demand	area, QC laboratory adequate for parts checking, inspection and verification 9) Generate production plan as customer demand	area, QC laboratory adequate for parts checking, inspection and verification 9) Generate production plan as customer demand
Level 3	**Store Supervisor** 1) Reviewing the store situation is in good condition 2) Review the store adheres to the Store Management Procedure 3) Perform stock/ store inventory 4) Review material and consumable items available for production usage (glove, mask, safety shoes etc.) 5) Provide periodic reports to assistant managers 6) Records and update items release to production according to production requirements 7) Review FIFO implemented at store operation 8) Reviewing the storage of chemicals according to MSDS/SDS	**Production Supervisor – Extrusion** 1) Verify machine settings parameter (speed, curing time, temperature, pressure etc.) (at control panel) according to specification 2) Confirm the material mixing (Binder agent, Kenaf powder, resin, PP etc.) within specification 3) Confirm parts handling after the Extrusion process 4) Confirm mould/ die in good in good condition 5) Give assistance to solve operation issues 6) Determine the need for periodic maintenance of the machine 7) Determine the workforce requirements for each section	**Production Supervisor – Pultrusion** 1) Verify machine settings parameter (pulling speed, gelatin temperature, curing temperature, resin viscosity etc.) (at control panel) according to specification 2) Confirm the material mixing (Binder agent, Kenaf Roving, Kenaf mat etc.) according to specification 3) Confirm mould/ die in good in good condition 4) Confirm parts handling after the Pultrusion process 5) Give assistance to solve operation issues 6) Determine the need for periodic maintenance of the machine 7) Determine the workforce requirements

Area	Material & Production Plan Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
	9) Make distribution of material and consumables based on production requirements	8) Preparing activity report according to shift 9) Conducting a preliminary discussion before the start of the shift 10) Updating the logbook for the next shift	for each section 8) Preparing activity report according to shift 9) Conducting a preliminary discussion before the start of the shift 10) Updating the logbook for the next shift
Level 2	**Forklift Driver** 1) Reviewing lifting machinery is in good condition 2) Handles lifting machinery as recommended by manufacture 3) Store the Chanel and beam at designated area 4) Transport Chanel and beam to lorries to ship to buyers 5) Arrange periodic maintenance requirements of lifting machinery	**Line Leader – Extrusion** 1) Review setting machine parameter (speed, curing time, temperature, pressure etc.) according to specification 2) Review material (Kenaf powder, Bonding agent, resin, PP etc.) in good condition before load to the machine 3) Check mould/ die in good condition 4) Get QC approval before run the full process 5) Review curing time within specification 6) Monitor and track progress the production progress 7) Review operators comply with chemical use requirements (as MSDS/SDS) 8) Review the use of PPE to all employees	**Line Leader – Pultrusion** 1) Review setting machine parameter (pulling speed, temperature, curing temperature etc.) according to specification 2) Review material (Kenaf Roving, Kenaf mat, Bonding agent, resin etc.) in good condition before load to the machine 3) Check mould/ die in good condition 4) Get QC approval before run the full process 5) Monitor and track progress the production progress 6) Review operators comply with chemical use requirements (as MSDS/SDS) 7) Review the use of PPE to all employees

Area	Material & Production Plan Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
Level 1	NO LEVEL	**Production Operator** 1) Receive raw material (Kenaf powder, Binder, PP etc.) from store 2) Do material initial check 3) Arrange raw materials for processing 4) Performs processing work as SOP 5) Send goods to Forklift driver 6) Adhere PPE usage (Safety helmet, safety shoes, glove, apron) as manufacturing practices	**Production Operator** 1) Receive raw material (Kenaf Roving, Kenaf mat, Binder etc.) from store 2) Do material initial check 3) Arrange raw materials for processing 4) Performs processing work as SOP 5) Send goods to Forklift driver 6) Adhere PPE usage (Safety helmet, safety shoes, glove, apron) as manufacturing practices

Table 4.18: List of Responsibilities for Group 120 (Extrusion & Pultrusion) (2 of 3)

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
Level 5	**<u>Operation Manager</u>** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout. 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	**<u>Operation Manager</u>** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout. 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	**<u>Operation Manager</u>** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout. 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)
Level 4	**<u>Assistant operation manager</u>** 1) Verify the process flow, operation parameter setting and quality testing	**<u>Engineering Assistant Manager</u>** 1) Approve the process flow, operation parameter setting and quality testing	**<u>Engineering Assistant Manager</u>** 1) Approve the process flow, operation parameter setting and quality testing

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	procedure for Extrusion and Pultrusion process 2) Make order of Binding agent, Resin matrix and other consumable items 3) Update supplier performance delivery status 4) Coordination of work activities with quality control supervisors, machine supervisors and store supervisors 5) Provide managerial reports daily operations 6) Determine machine / store operation requirements and equipment 7) Carries out factory equipment verification work 8) Ensure QMS requirement are met (ISO, OHSAS etc.) 9) Review machine, equipment, storage area, QC laboratory adequate for parts checking, inspection and verification 10) Generate production plan as customer demand	procedure for Extrusion and Pultrusion process 2) Update new technology on Bonding agent for Extrusion and Pultrusion process 3) Approve machine preventive maintenance schedule 4) Approve product development plan for Chanel and beam 5) Provide managerial reports daily operations 6) Carries out factory equipment verification work 7) Review maintenance of equipment and machines perform as plan 8) Arrange analysis and process improvement for cost reduction	procedure for Extrusion and Pultrusion process 2) Update new technology on Bonding agent for Extrusion and Pultrusion process 3) Approve machine preventive maintenance schedule 4) Approve product development plan for Chanel and beam 5) Provide managerial reports daily operations 6) Carries out factory equipment verification work 7) Review maintenance of equipment and machines perform as plan 8) Arrange analysis and process improvement for cost reduction

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
Level 3	**Quality Control Supervisor** 1) Verify product quality tests (dimensional, strength, durability, dimensional etc.) 2) Confirm material mixing according to specification 3) Review binding used as stated in specification 4) Provide report to assistant operation manager 5) Arrange physical and mechanical tests on parts (strength, thickness, cleanliness) 6) Arrange measuring equipment for calibration 7) Analyze quality data for improvement action	**Foreman** 1) Prepare machine and equipment preventive maintenance plan 2) Arrange machine and equipment trouble shooting and repair 3) Review machine in order to run operation 4) Review spare part availability 5) Analyze machine down time trend 6) Improve/ upgrade machine capability 7) Assist operation on operation issues	**Electrical Supervisor** 1) Prepare electrical maintenance inspection plan 2) Arrange machine and equipment electrical trouble shooting and repair 3) Review wiring and power supply for work station safe 4) Provides lighting by maintaining electrical lighting fixtures 5) Provides engineering support by responding to requests for electrical problems 6) Review electrical spare pare sufficiency for machine and equipment operation
Level 2	**Quality Control Inspector** 1) Performs verification on Incoming, In-Process, and Outgoing products. 2) Visually compares work pieces against one another to assess/detect manufacturing variations in processes. 3) Verify material mixture (Kenaf powder, Kenaf Roving, Kenaf mat, Bonding	**Mechanical Technician** 1) Carry out maintenance of equipment and machines 2) Carry out machine and equipment repair. 3) Supervise production line equipment maintenance on shift	**Electrical Technician** 1) Install and maintain wiring, control, and lighting systems 2) Inspect electrical components, such as transformers and circuit breakers 3) Identify electrical problems with a variety of testing devices

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	agent etc.) according to specification 4) Perform product quality tests (dimensional, strength, durability, etc.) 5) Reports quality problems or findings to Quality Control Supervisor 6) Follows up action to review that corrective action on Chanel and beam carried out 7) Confirm the measuring equipment calibration status is still valid 8) Maintains record of inspections	4) Lead the equipment ramp up and conversion to support production 5) Provide technical support to equipment 6) Handle hardware and software related issue 7) Conduct training on equipment operation and maintenance	4) Repair or replace wiring, equipment, or fixtures using hand tools and power tools 5) Follow state and local building regulations based on the National Electric Code 6) Maintain and repair motors, equipment, and machine control systems 7) Install wiring and troubleshoot electrical problems
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

Table 4.19: List of Responsibilities for Group 120 (Extrusion & Pultrusion) (3 of 3)

Area	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes	
Level 8	NOT AVAILABLE	NOT AVAILABLE	
Level 7	NOT AVAILABLE	NOT AVAILABLE	
Level 6	NOT AVAILABLE	NOT AVAILABLE	
Level 5	**Operation Manager** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies	**Operation Manager** 1) Determine demand and distribution of Extrusion and Pultrusion beam 2) Update on latest binding technology 3) Update an information Bio-composite Panel/ beam usage in industry 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies	

Area	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes	
	10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	
Level 4	**Engineering Assistant Manager** 1) Approve the process flow, operation parameter setting and quality testing procedure for Extrusion and Pultrusion process 2) Update new technology on Bonding agent for Extrusion and Pultrusion process. 3) Approve machine preventive maintenance schedule 4) Approve product development plan for Chanel and beam 5) Provide managerial reports daily operations 6) Carries out factory equipment verification work 7) Review maintenance of equipment and machines perform as plan 8) Arrange analysis and process improvement for cost reduction	**Engineering Assistant Manager** 1) Approve the process flow, operation parameter setting and quality testing procedure for Extrusion and Pultrusion process 2) Update new technology on Bonding agent for Extrusion and Pultrusion process. 3) Approve machine preventive maintenance schedule 4) Approve product development plan for Chanel and beam 5) Provide managerial reports daily operations 6) Carries out factory equipment verification work 7) Review maintenance of equipment and machines perform as plan 8) Arrange analysis and process improvement for cost reduction	

Area	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes	
Level 3	**Binder/ Standard Officer** 1) Setting up material formulation for Extrusion and Pultrusion process (Kenaf fiber, binding agent, resin, PE, PP etc.) 2) Make sure the formulation does not have side effect on the user and minimal impact to environment 3) Establish a quality procedure (SOP) for Extrusion and Pultrusion process (with permissible tolerance) 4) Prepare list of materials needed for production purposes 5) Update new Binding technology for Extrusion and Pultrusion process 6) Resource new Binding agent for cost down activity 7) Collaborate with prod development staff for new introduce Chanel and beam 8) Train production staff on Extrusion and Pultrusion process	**Product Development Supervisor** 1) Arrange new product development on channel and beam 2) Arrange related test (Strength, durability, dimensional) for new prod development 3) Establish machine parameter (Speed, pressure, temperature, curing time etc.) for new developed product 4) Order new mould/ die for Extrusion and Pultrusion process 5) Produce material list and supplier for new developed product	
Level 2	**Assistant Binder** 1) Perform the new operation process trial 2) Prepare machines, tools and materials for parts/ process trial and testing	**Product Development Assistant** 1) Prepare material and equipment for prod development purposes 2) Perform quality control tests for new products	

Area	Production Engineering Responsibilities May Includes	New Product Development Responsibilities May Includes	
	3) Adjust machine parameter setting (speed, temperature, curing time, pressure etc.) for new formulation 4) Prepare sample for third party quality testing and trial 5) Prepare draft memo (specification) and seek approval from binder 6) Provide training to supervisors and line leaders for newly developed formulation/ materials	3) Submit test results to Prod development supervisor 4) Review the need for laboratory apparatus is adequate 5) Maintain the parameter setting and testing record 6) Review laboratory safety is in good condition	
Level 1	NO LEVEL	NO LEVEL	

Table 4.20: List of Responsibilities for Group 120 (Biodegradable Utensils) (1 of 2)

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
Level 5	**Operation Manager** 1) Determine demand & distribution of BDU 2) Update on latest government regulation on the DBU usage 3) Update the benefit and advantages on BDU usage for human being 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	**Operation Manager** 1) Determine demand & distribution of BDU 2) Update on latest government regulation on the DBU usage 3) Update the benefit and advantages on BDU usage for human being 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	**Operation Manager** 1) Determine demand & distribution of BDU 2) Update on latest government regulation on the DBU usage 3) Update the benefit and advantages on BDU usage for human being 4) Review continuous contact with machine supplier and mould/die maker 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
Level 4	**Production Planning Executive** 1) Planning and prioritizing operations to review maximum performance and minimum delay 2) Determining manpower, equipment and raw materials needed for production demand 3) Develops a production schedule 4) Liaises with customers, suppliers and production team for effective planning 5) Provide chemical (Bisulphite, filler, sizer etc.) and consumable storage as recommended by supplier (as MSDS/SDS) 6) Plan receiving of material and consumable 7) Arrange BDU delivery to customer 8) Monitors production and raw material costs 9) Review supply of water and other consumable sufficiency for operation	**Production Executive** 1) Verify the formulation (Chemical and soda) for the manufacture of pulp 2) Determine the quantity of Pulp and utensil by type 3) Plan pulp and utensil production according to customer demand 4) Determine the amount of chemicals (Bisulphite, filler, sizer etc.) and soda for purchase purposes 5) Setting the water and soda ratio for each utensil 6) Review compliances to rule and regulation (PBT, DOE, JKJ etc.) 7) Review used water are control and treated before dispose to environment 8) Verify Pulp and Utensil handling procedures. 9) Preparing monthly reports	**Production Executive** 1) Verify the formulation (Chemical and soda) for the manufacture of pulp 2) Determine the quantity of Pulp and utensil by type 3) Plan pulp and utensil production according to customer demand 4) Determine mould/ die required for production 5) Review compliances to rule and regulation (PBT, DOE, JKJ etc.) 6) Review used water are control and treated before dispose to environment 7) Verify Pulp and Utensil handling procedures 8) Initiate improvement plan (product and process) 9) Preparing monthly reports

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
Level 3	**Store Supervisor** 1) Reviewing the store situation is in good condition 2) Review the store adheres to the Store Management Procedure 3) Perform stock/ store inventory 4) Review material and consumable items available for production usage (glove, mask, safety shoes etc.) 5) Provide periodic reports to assistant managers 6) Records and update items release to production according to production requirements 7) Review FIFO implemented at store operation 8) Reviewing the storage of chemicals according to MSDS/SDS 9) Review store humidity and temperature suitability for Pulp storage 10) Make distribution of material and consumables based on production requirements	**Production Supervisor – Pulp** 1) Verify machine settings parameter (speed, temperature, pressure etc.) (at control panel) according to specification 2) Confirm Cellulose and Pulp handling procedure 3) Review environment suitability (humidity, temperature) for pulp operation 4) Verify usage of Chemical (Bisulphite, filler, sizer etc.) and soda according to process parameter 5) Give assistance to solve operation issues 6) Determine the need for periodic maintenance of the machine 7) Determine the workforce requirements for each section 8) Preparing activity report according to shift 9) Conducting a preliminary discussion before the start of the shift 10) Updating the logbook for the next shift	**Production Supervisor – Utensil** 1) Verify machine settings parameter (stroke speed, temperature, pressure etc.) (at control panel) according to specification 2) Confirm Utensil handling procedure 3) Verify Utensil expiry date 4) Verify mould/die condition for operation 5) Review operation comply to hygiene requirement 6) Give assistance to solve operation issues 7) Determine the need for periodic maintenance of the machine and mould/die 8) Determine the workforce requirements for each section 9) Preparing activity report according to shift 10) Conducting a preliminary discussion before the start of the shift 11) Updating the logbook for the next shift

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
Level 2	**Forklift Driver** 1) Reviewing lifting machinery is in good condition 2) Handles lifting machinery as supplier recommendation 3) Store Pulp and Utensil as requirement 4) Transport fiber and cores to lorries to ship to buyers 5) Arrange periodic maintenance requirements of lifting machinery	**Line Leader – Pulp** 1) Review setting machine parameter (speed, temperature, pressure etc.) according to specification 2) Get QC approval before run the full process 3) Run the process according to parameter setting 4) Review all employee using the PPE, adhere to Pulp handling procedure and comply with chemical use requirements (as MSDS/SDS) 5) Monitor and track progress the production progress	**Line Leader – Utensil** 1) Review setting machine parameter (stroke speed, temperature, pressure etc.) according to specification and in good condition 2) Get QC approval before run the full process 3) Confirm expiry date correct and clear. 4) Run the process according to parameter setting 5) Review all employee using the PPE and adhere to Pulp handling procedure 6) Confirm adherences to Hygiene operation requirement 7) Monitor and track progress the production progress
Level 1	NO LEVEL	**Production Operator** 1) Receive raw material (Kenaf core, chemical etc.) from store 2) Do material initial check 3) Arrange raw materials for processing 4) Run operation as SOP 5) Handle Pulp according to procedure.	**Production Operator** 1) Receive raw material (Pulp) from store 2) Do material initial check 3) Arrange raw materials for processing 4) Run operation as SOP 5) Check Utensil expiry date 6) Handle Utensil according to procedure.

Area	Production Planning Responsibilities May Includes	Production Operation Responsibilities May Includes	Production Operation Responsibilities May Includes
		6) Send goods to Forklift driver 7) Adhere PPE (Safety helmet, safety shoes, glove, apron) usage as manufacturing practices	7) Send goods to Forklift driver 8) Adhere PPE (Safety helmet, safety shoes, glove, apron) usage as manufacturing practices

Table 4.21: List of Responsibilities for Group 120 (Biodegradable Utensils) (2 of 2)

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	**Operation Manager** 1) Determine demand & distribution of BDU 2) Update on latest government regulation on the DBU usage 3) Update the benefit and advantages on BDU usage for human being. 4) Review continuous contact with machine supplier and mould/die maker	**Operation Manager** 1) Determine demand & distribution of BDU 2) Update on latest government regulation on the DBU usage 3) Update the benefit and advantages on BDU usage for human being 4) Review continuous contact with machine supplier and mould/die maker	**Operation Manager** 1) Determine demand & distribution of BDU 2) Update on latest government regulation on the DBU usage 3) Update the benefit and advantages on BDU usage for human being. 4) Review continuous contact with machine supplier and mould/die maker

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget 9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)
Level 4	**<u>Quality Control Executive</u>** 1) Verify the formulation for the manufacture of pulps 2) Verify the amount of chemicals and soda for the process 3) Verify Pulp and Utensil quality inspection flow and reference/ specification 4) Ensure QMS requirement are met (ISO, OHSAS etc.) 5) Setting the water and soda ratio for each utensil	**<u>Maintenance Executive</u>** 1) Verify machine and equipment preventive maintenance plan 2) Arrange machine and equipment trouble shooting and repair 3) Review machine in order to run operation 4) Review spare part availability 5) Analyze machine down time trend 6) Improve/ upgrade machine capability 7) Assist operation on operation issues.	**<u>Maintenance Executive</u>** 1) Verify machine and equipment preventive maintenance plan 2) Arrange machine and equipment trouble shooting and repair 3) Review machine in order to run operation 4) Review spare part availability 5) Analyze machine down time trend 6) Improve/ upgrade machine capability 7) Assist operation on operation issues.

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	6) Verify humidity level for Pulp storage 7) Determine the expiry date for Utensil 8) Provide monthly quality report to assistant manager 9) Coordinate quality improvement plan. 10) Preparing monthly reports	8) Coordinate work performed by outside vendors 9) Responding immediately to equipment breakdowns	8) Coordinate work performed by outside vendors 9) Responding immediately to equipment breakdowns
Level 3	**Quality Control Supervisor** 1) Verify product quality tests (shape, strength, durability, appearance, odor etc.) 2) Confirm material mixing according to specification 3) Review process formulation (chemical, filler, water, soda mixture etc.) used as stated in specification 4) Verify used water concentricity (at Water treatment plant) for disposal 5) Verify Utensil expiry date 6) Provide report to Quality executive 7) Arrange measuring equipment for calibration	**Maintenance Supervisor – Mechanical** 1) Prepare mechanical maintenance inspection plan 2) Arrange machine and equipment trouble shooting and repair 3) Arrange issuance spare parts for replacement 4) Arrange daily machine and equipment inspection 5) Arrange outside machine repair. 6) Provides engineering support by responding to requests for electrical problems 7) Adherence to all Statutory Standards and Regulations	**Maintenance Supervisor – Electrical** 1) Prepare electrical maintenance inspection plan 2) Arrange machine and equipment electrical trouble shooting and repair 3) Review wiring and power supply for work station safe 4) Provides lighting by maintaining electrical lighting fixtures 5) Provides engineering support by responding to requests for electrical problems 6) Review electrical spare pare sufficiency for machine and equipment operation

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	8) Analyze quality data for improvement action	8) Supervise and coordinate a small team of in-house maintenance contractors	
Level 2	**Quality Control Inspector** 1) Performs verification on Incoming, In-Process, and Outgoing products 2) Visually compares work pieces against one another to assess/ detect manufacturing variations in processes. 3) Verify material mixture (chemical, filler, water, soda mixture etc.) used as stated in specification 4) Perform product quality tests (shape, strength, durability, appearance, odor etc.)	**Mechanical Technician** 1) Carry out maintenance of equipment and machines 2) Carry out machine and equipment repair. 3) Supervise production line equipment maintenance on shift 4) Lead the equipment ramp up and conversion to support production 5) Provide technical support to equipment 6) Handle hardware and software related issue	**Electrical Technician** 1) Install and maintain wiring, control, and lighting systems 2) Inspect electrical components, such as transformers and circuit breakers 3) Identify electrical problems with a variety of testing devices 4) Repair or replace wiring, equipment, or fixtures using hand tools and power tools 5) Follow state and local building regulations based on the National

Area	Quality Control Responsibilities May Includes	Production Engineering Responsibilities May Includes	Production Engineering Responsibilities May Includes
	5) Assists and/or trains operators on part visual acceptability, and measurement and process procedures as required 6) Reports quality problems or findings to Quality Control Supervisor 7) Confirm the Utensil expiry date 8) Maintains quality records of inspections and prepares list of defects 9) Confirm the measuring equipment calibration status is still valid	7) Conduct training on equipment	Electric Code 6) Maintain and repair motors, equipment, and machine control systems 7) Install wiring and troubleshoot electrical problems
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

Table 4.22: List of Responsibilities for Group 120 (Animal Food Pellet)

Area	**Material Control** **Responsibilities May Includes**	**Production Operation** **Responsibilities May Includes**	**Quality Control** **Responsibilities May Includes**
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	**Factory Manager** 1) Determine demand and distribution of Animal Pellet food 2) Update the benefit and advantages Animal Pellet food to animal 3) Update the related Animal pellet food ingredient and technology 4) Update the Kenaf growing status 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout. 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget	**Factory Manager** 1) Determine demand and distribution of Animal Pellet food 2) Update the benefit and advantages Animal Pellet food to animal 3) Update the related Animal pellet food ingredient and technology 4) Update the Kenaf growing status 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout. 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget	**Factory Manager** 1) Determine demand and distribution of Animal Pellet food 2) Update the benefit and advantages Animal Pellet food to animal 3) Update the related Animal pellet food ingredient and technology 4) Update the Kenaf growing status 5) Good relationship with material supplier and customer 6) Overseeing inventory, distribution of goods and facility layout. 7) Regulate the operation of the factory 8) Provides monthly reports, annual operation plan and operation budget

Area	Material Control Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
	9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)	9) Making certificates / authentication of procurement of operational supplies 10) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB)
Level 4	**Production executive** 1) Determine the formula for animal Pellet food production 2) Determine the quantity of animal pellet food by type 3) Plan food production on demand 4) Produce new flavor of animal Pellet food 5) Verify process adherences to guidelines (GMP, GHP, JAKIM). 6) Verify the hygiene process and control at production 7) Verify the store management procedure 8) Verify stock/ store inventory 9) Produce monthly report	**Production executive** 1) Determine the formula for animal Pellet food production 2) Determine the quantity of animal pellet food by type 3) Plan food production on demand 4) Produce new flavor of animal Pellet food 5) Verify process adherences to guidelines (GMP, GHP, JAKIM). 6) Initiate improvement plan (product and process) 7) Verify the hygiene process and control at production 8) Verify the store management procedure 9) Verify stock/ store inventory 10) Produce monthly report	**Animal Food Nutritionist** 1) Setting up material formulation for animal Pellet food 2) Review the formulations do not have side effects on livestock 3) Establish a quality manual/ procedure (SOP) for a formulation / product 4) Provides a list of the ingredients needed for the development of livestock feed 5) Conduct experimental Pellet food development into livestock 6) Adhere to guidelines for production purposes (GMP, GHP, JAKIM) 7) Keep up with the development and processing technology 8) Perform data retrieval and analysis for improvements

Area	Material Control Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
Level 3	**Store Supervisor** 1) Reviewing the store situation is in good condition 2) Review the store adheres to the Store Management Procedure 3) Perform stock/ store inventory 4) Review material and consumable items available for production usage (glove, mask, safety shoes etc.) 5) Provide periodic reports to executive 6) Records and update items release to production according to production requirements 7) Review FIFO implemented at store operation 8) Reviewing the storage of chemicals according to MSDS/SDS 9) Make distribution of material and consumables based on production requirements	**Production supervisor** 1) Arrange animal Pellet food grading 2) Arrange raw materials for Pellet food manufacturing processes (Kenaf shoot, soybean, paddy straw, molasses (for added protein content) 3) Verify relevant food tests (moisture, odor, color) 4) Verify machine settings parameter (speed, pressure etc.) according to specification 5) Determine the need for periodic maintenance of the machine 6) Determine the workforce requirements for each section 7) Updating the logbook for the next shift	**Assistant Food Nutritionist** 1) Conduct food quality control test (taste, odor, color, humidity) 2) Submit test results to food nutritionist 3) Review laboratory equipment requirements are adequate and safe 4) Review laboratory equipment is working properly 5) Review laboratory safety is in good condition 6) Monitor the food development progress/ quality to experimental animals

Area	Material Control Responsibilities May Includes	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes
Level 2	**Forklift Driver** 1) Reviewing lifting machinery is in good condition 2) Handles lifting machinery as supplier recommendation 3) Store Pulp and Utensil as requirement 4) Transport Pulp and Utensil to lorries to ship to buyers 5) Arrange periodic maintenance requirements of lifting machinery	**Machine Operator** 1) Receive, inspect and record received raw materials (Kenaf shoots, Soybean, Paddy straw etc.) 2) Separate kenaf shoots based on grade 3) Cut shoots kenaf according to the desired size 4) Dry the kenaf shoots 5) Grind the dried kenaf shoots 6) Insert kenaf powder into the Pelletizer machine according to the required size 7) Perform Food Pellet packaging 8) Prepare daily spending reports	NO LEVEL
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

Table 4.23: List of Responsibilities for Group 120 (Fibre & Core – Mechanical)

AREA	MATERIAL CONTROL Responsibilities May Includes	PRODUCTION OPERATION Responsibilities May Includes	QUALITY CONTROL Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	**Factory Manager** 1) Determine demand and distribution of Fibre and Core 2) Update the Kenaf growing and harvesting status 3) Overseeing inventory, distribution of goods and facility layout. 4) Regulate the operation of the factory 5) Provides annual operation plan 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water	**Factory Manager** 1) Determine demand and distribution of Fibre and Core 2) Update the Kenaf growing and harvesting status 3) Overseeing inventory, distribution of goods and facility layout. 4) Regulate the operation of the factory 5) Provides annual operation plan 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water	**Factory Manager** 1) Determine demand and distribution of Fibre and Core 2) Update the Kenaf growing and harvesting status 3) Overseeing inventory, distribution of goods and facility layout. 4) Regulate the operation of the factory 5) Provides annual operation plan 6) Preparing monthly reports 7) Making certificates / authentication of procurement of operational supplies 8) Coordinate good cooperation with related agencies (DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water

AREA	MATERIAL CONTROL Responsibilities May Includes	PRODUCTION OPERATION Responsibilities May Includes	QUALITY CONTROL Responsibilities May Includes
	Company) 9) Maintain good relationship with local community 10) Prepare operation Yearly budget	Company) 9) Maintain good relationship with local community 10) Prepare operation Yearly budget	Company) 9) Maintain good relationship with local community 10) Prepare operation Yearly budget
Level 4	**Assistant Factory Manager** 1) Monitor the Kenaf growing and harvesting status 2) Verify store operation in good order 3) Verify process quality procedure on Core and Fibre. 4) Coordination of work activities with quality supervisor 5) Arrange Core and Fibre delivery to customer 6) Provide managerial reports daily operations 7) Determine machine / store operation requirements and equipment 8) Carries out factory equipment verification work 9) Arrange maintenance of equipment and machines with outside contractor	**Assistant Factory Manager** 1) Monitor the Kenaf growing and harvesting status 2) Verify store operation in good order 3) Verify process quality procedure on Core and Fibre. 4) Coordination of work activities with quality supervisor 5) Arrange Core and Fibre delivery to customer 6) Provide managerial reports daily operations 7) Initiate improvement plan (product and process). 8) Determine machine / store operation requirements and equipment 9) Carries out factory equipment verification work	**Assistant Factory Manager** 1) Monitor the Kenaf growing and harvesting status 2) Verify store operation in good order 3) Verify process quality procedure on Core and Fibre. 4) Coordination of work activities with quality supervisor 5) Arrange Core and Fibre delivery to customer 6) Provide managerial reports daily operations 7) Ensure QMS requirement are met (ISO, Environment etc.) 8) Determine machine / store operation requirements and equipment 9) Carries out factory equipment verification work

AREA	MATERIAL CONTROL Responsibilities May Includes	PRODUCTION OPERATION Responsibilities May Includes	QUALITY CONTROL Responsibilities May Includes
		10) Arrange maintenance of equipment and machines with outside contractor	10) Arrange maintenance of equipment and machines with outside contractor
Level 3	**Store Supervisor** 1) Arrange receiving Kenaf from RMCC 2) Reviewing the store situation is in good condition 3) Review the store adheres to the Store Management Procedure 4) Perform stock/ store inventory 5) Review material and consumable items available for production usage (glove, mask, safety shoes etc.) 6) Provide periodic reports to superior 7) Records and update items release to production according to production requirements 8) Review FIFO implemented at store operation 9) Reviewing the storage of chemicals according to MSDS/SDS 10) Make distribution of material and consumables based on production requirements	**Production supervisor** 1) Arrange raw materials (Kenaf stems) for production 2) Verify quality level of Core and Fibre 3) Review equipment (Bundela, Jumbo beg etc.) sufficiency 4) Arrange segregation of Kenaf (Wet and Dry) 5) Arrange fiber grading which has been produced according to its class 6) Verify machine settings parameter (speed, pressure etc.) according to specification 7) Determine the need for periodic maintenance of the machine 8) Determine the workforce requirements for each section 9) Updating the logbook for the next shift	**Quality Control Supervisor** 1) Prepare inspection procedure and element (clean, no foreign material etc.) 2) Arrange Core and Fibre inspection during process and complete process. 3) Verify fiber and core free from foreign objects such as stone, seamless rope, plastic, metal sheet etc. 4) Review the level of fiber and core humidity as required by the buyer 5) Provide report to superior

AREA	MATERIAL CONTROL Responsibilities May Includes	PRODUCTION OPERATION Responsibilities May Includes	QUALITY CONTROL Responsibilities May Includes
Level 2	**Forklift Driver** 1) Reviewing lifting machinery is in good condition 2) Handles lifting machinery as supplier recommendation 3) Store Core and Fibre to the store 4) Weight Core and Fibre 5) Transport fiber and cores to lorries to ship to buyers 6) Arrange periodic maintenance requirements of lifting machinery	**Machine Operator** 1) Receive and check Kenaf stems from RMCC 2) Weight Kenaf stem 3) Separate the Kenaf sticks wet and dry 4) Check fiber and core (free from foreign objects such as stone, seamless rope, plastic, metal sheet etc. 5) Insert kenaf sticks in Twister machines and high-capacity Decorticator machines 6) Making fiber bundle 7) Store the core in a jumbo bag 8) Store fiber and core in the store	NO LEVEL
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

Table 4.24: List of Responsibilities for Group 120 (Fibre & Core – Bio-Retting)

Area	Production Operation Responsibilities May Includes		
Level 8	NOT AVAILABLE		
Level 7	NOT AVAILABLE		
Level 6	NOT AVAILABLE		
Level 5	**Factory Manager** 1) Determine demand and distribution of Fibre and Core 2) Update the Kenaf growing and harvesting status 3) Verify the used/ residual water treatment process 4) Overseeing the operation, inventory, distribution of goods and facility layout 5) Provides monthly reports, annual operation plan and operation budget 6) Making certificates / authentication of procurement of operational supplies 7) Coordinate good cooperation with related agencies (DOE, DOSH, PBT, BOMBA, SOCSO, EPF, TNB, State Water Company)		

Area	Production Operation Responsibilities May Includes		
	8) Maintain good relationship with local community		
Level 4	**<u>Assistant operation manager</u>** 1) Verify Bio-retting process 2) Verify dispose of used/ residual water procedure – before dispose to environment. 3) Arrange receiving Kenaf stems form RMCC 4) Verify equipment use for Bio-retting process (BaDec, Tank, Enzyme, pH tape, Chelating agent, etc.) 5) Arrange Core and Fibre delivery to buyer 6) Monitor the Kenaf growing and harvesting status 7) Verify store operation in good order		

Area	Production Operation Responsibilities May Includes		
	8) Verify process quality procedure on Fibre and Core 9) Coordination of work activities with quality supervisor 10) Provide managerial reports daily operations 11) Determine machine / store operation requirements and equipment 12) Carries out factory equipment verification work 13) Arrange maintenance of equipment and machines with outside contractor		
Level 3	**Production supervisor** 1) Review the equipment is in good condition and ready for operation (BaDec, Tank, Enzyme, pH tape, Chelating agent, Bundela, Jumbo beg etc.) 2) Review that water, enzyme and pH levels, water temperature, Chelating agent comply with specification. 3) Review Bio-retting process adhere the SOP. 4) Verify quality level of Core and Fibre		

Area	Production Operation Responsibilities May Includes		
	5) Conducting fiber grading which has been produced according classification 6) Arrange segregation of wet & dry Kenaf 7) Review dispose of used/ residual water according to procedure before release to environment 8) Verify machine settings parameter (speed, pressure etc.) according to specification 9) Review adequate PPE equipment (safety) equipment (goggle, glove, footwear, cover, etc. 10) Determine the need for periodic maintenance of the machine 11) Provides monthly reports to superior 12) Updating the logbook for the next shift		

Area	Production Operation Responsibilities May Includes		
Level 2	**Bio–Retting Operator** 1) Receive and weigh and record Kenaf stem from RMCC 2) Arrange preparation of Kenaf Ribbon 3) Carry out water, enzyme and Surfactant, Chelating agent mixing 4) Insert ribbon fiber into the tank 5) Examine the water pH level 6) Make sure the soaked ribbon has been completely retted (3~5 days) 7) Wash and dry the processed fibers 8) Store the fiber in the store 9) Record the amount of fiber produced 10) Place residual water into recycled tanks for recycling purposes		
Level 1	NO LEVEL		

Table 4.25: List of Responsibilities for Group 120 (Kenaf Seed)

Area	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes	
Level 8	NOT AVAILABLE	NOT AVAILABLE	
Level 7	NOT AVAILABLE	NOT AVAILABLE	
Level 6	NOT AVAILABLE	NOT AVAILABLE	
Level 5	**Factory Manager** 1) Determine demand and distribution of Fibre seeds 2) Update the Kenaf growing and harvesting status 3) Overseeing inventory, distribution of goods and facility layout. 4) Determine adequacy of machine and equipment for seed processing 5) Review adequacy of laboratory/ storage for Kenaf seeds 6) Regulate the operation of the factory 7) Provides monthly reports, annual operation plan and operation budget 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOE, DOSH, PBT,	**Factory Manager** 1) Determine demand and distribution of Fibre seeds 2) Update the Kenaf growing and harvesting status 3) Overseeing inventory, distribution of goods and facility layout. 4) Determine adequacy of machine and equipment for seed processing 5) Review adequacy of laboratory/ storage for Kenaf seeds 6) Regulate the operation of the factory 7) Provides monthly reports, annual operation plan and operation budget 8) Making certificates / authentication of procurement of operational supplies 9) Coordinate good cooperation with related agencies (DOE, DOSH, PBT,	

Area	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes	
	BOMBA, SOCSO, EPF, TNB, State Water company) 10) Maintain good relationship with local community	BOMBA, SOCSO, EPF, TNB, State Water company) 10) Maintain good relationship with local community	
Level 4	**Assistant Factory Manager** 1) Verify Kenaf seeds selection process (seeds receiving, selection, drying, testing/ checking, packaging & cold storage) 2) Arrange receiving Kenaf seeds form RMCC 3) Approve Kenaf seeds testing procedure 4) Review Kenaf seeds type and quality level required by customer 5) Review laboratory equipment adequate for Kenaf seeds testing and storage 6) Monitor the Kenaf growing and harvesting status 7) Coordination of work activities with Laboratory assistance	**Assistant Factory Manager** 1) Verify Kenaf seeds selection process (seeds receiving, selection, drying, testing/ checking, packaging & cold storage) 2) Arrange receiving Kenaf seeds form RMCC 3) Approve Kenaf seeds testing procedure 4) Review Kenaf seeds type and quality level required by customer 5) Review laboratory equipment adequate for Kenaf seeds testing and storage 6) Monitor the Kenaf growing and harvesting status 7) Coordination of work activities with Laboratory assistance	

Area	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes	
	8) Determine kenaf seeds processing machine, store operation requirements and equipment are adequate 9) Arrange maintenance of equipment and machines with outside contractor 10) Provide managerial reports daily operations	8) Determine kenaf seeds processing machine, store operation requirements and equipment are adequate 9) Arrange maintenance of equipment and machines with outside contractor 10) Provide managerial reports daily operations	
Level 3	**Production supervisor** 1) Arrange receiving Kenaf seeds from grower 2) Review the machine and equipment is in good condition and ready for operation 3) Verify seeds operation and grading according to specification. 4) Review the raw materials (Kenaf stem) adequate for operation 5) Establish procedure on handling Kenaf seeds 6) Verify machine settings parameter (speed, pressure etc.) according to specification 7) Review adequate PPE equipment (safety) equipment (goggle, glove,	**Laboratory Assistant** 1) Perform seed quality control tests (Humidity, Authenticity, Germination, Rawatan racun) 2) Prepare seeds checking/ testing procedure 3) Verify Oven storage temperature record. 4) Submit test results to assistant manager 5) Review the need for adequate laboratory set-up stocks 6) Verify the equipment (Oven storage) works properly 7) Ensure laboratory safety is in good condition	

Area	Production Operation Responsibilities May Includes	Quality Control Responsibilities May Includes	
	footwear, cover, etc. 8) Determine the need for periodic maintenance of the machine 9) Provides monthly reports to superior		
Level 2	**<u>Factory Operator</u>** 1) Receive Kenaf seed from RMCC 2) Perform an initial check to Kenaf seeds 3) Adhere to Kenaf seeds classification procedure. 4) Performs processing work according to requirements. 5) Stored the seed in the store	**<u>Laboratory General Worker</u>** 1) Prepare laboratory apparatus for Kenaf seeds checking/testing 2) Prepare Kenaf seeds samples for checking/ testing 3) Clean equipment and lab equipment layout 4) Assist Laboratory assistance to perform Kenaf seeds testing 5) Conduct periodical check Oven storage to monitor temperature & humidity level	
Level 1	NO LEVEL	NO LEVEL	

Table 4.26: List of Responsibilities for Group 120 (Animal Bedding)

Area	Production Operation Responsibilities May Includes		
Level 8	NOT AVAILABLE		
Level 7	NOT AVAILABLE		
Level 6	NOT AVAILABLE		
Level 5	**Factory Manager** 1) Determine demand and distribution of Animal bedding 2) Update Animal bedding market trend and new development. 3) Overseeing inventory, distribution of goods and facility layout. 4) Update the Kenaf growing and harvesting status 5) Determine adequacy of machine and equipment for Animal bedding processing 6) Regulate the operation of the factory 7) Provides monthly reports, annual operation plan and operation budget 8) Making certificates / authentication of procurement of operational supplies		

Area	Production Operation Responsibilities May Includes		
	9) Coordinate good cooperation with related agencies (DOE, DOSH, PBT, BOMBA, SOCSO, EPF, TNB)		
Level 4	**<u>Assistant operation manager</u>** 1) Verify Animal bedding production process and quality control 2) Arrange receiving Kenaf core form supplier 3) Determine adequate animal bedding processing machine and equipment 4) Monitor the Kenaf growing and harvesting status 5) Coordination of work activities with supervisor 6) Determine machine, packaging and store operation requirements and equipment 7) Arrange maintenance of equipment and		

Area	Production Operation Responsibilities May Includes		
	machines 8) Provide managerial reports daily operations		
Level 3	**<u>Production supervisor</u>** 1) Ensure the machine and equipment is in good condition and ready for operation 2) Establish procedure on handling Animal bedding 3) Verify Animal bedding operation, grinding and packaging procedure according to specification. 4) Ensure adequate PPE equipment (safety) equipment (goggle, glove, footwear, cover, etc.) 5) Determine the need for periodic maintenance of the machine 6) Provides reports to superior		

Area	Production Operation Responsibilities May Includes		
Level 2	**<u>Animal Bedding Operator</u>** 1) Receive and weight the Kenaf core form supplier 2) Grind Kenaf core as specification 3) Check Animal bedding quality level (free from foreign material) 4) Weight and pack Animal bedding and affix label as required. 5) Prepare daily production/spending reports		
Level 1	NO LEVEL		

Table 4.27: List of Responsibilities for Group 120 (Tobacco & Cigar)

Area	Tobacco Post-Harvest Operation Responsibilities May Includes	Tobacco Post-Harvest Operation Responsibilities May Includes	Tobacco Special Product Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	NOT AVAILABLE	NOT AVAILABLE	**Cigar Specialist (Leaf Cigarette)** 1) Determine the ingredients for cigar 2) Make cigar according to customer's requirement 3) Consult with customers to determine the quality of cigar 4) Test cigar to keep the culinary taste 5) Arrange search and purchase of herbs for cigar 6) Establish new ingredients for cigar verity taste.

Area	Tobacco Post-Harvest Operation Responsibilities May Includes	Tobacco Post-Harvest Operation Responsibilities May Includes	Tobacco Special Product Responsibilities May Includes
Level 4	**Station Manager** 1) Determine tobacco distribution according to request 2) Make sure the shipment is made as requested 3) Regulate the operation of the factory 4) Preparing monthly reports 5) Making certificates / authentication of procurement of operational supplies 6) Maintain good relationship with grower and local community 7) Review 'Durable house' able to run as order	**Station Manager** 1) Determine tobacco distribution according to request 2) Make sure the delivery is made as requested 3) Regulate the operation of the factory 4) Preparing monthly reports 5) Making certificates / authentication of procurement of operational supplies 6) Maintain good relationship with grower and local community 7) Review 'Durable house' able to run as order	**Assistant Specialist** 1) Conduct cigar quality tests (humidity, authenticity, germination) 2) Pack according to the requirements 3) Submit test results to cigar specialist 4) Review the need for adequate laboratory set-up stocks 5) Review the laboratory equipment works properly 6) Review laboratory safety is in good condition
Level 3	**Station Supervisor** 1) Receive Tobacco leaf from supplier 2) Coordination of work activities with team member 3) Determine store operation requirements and equipment 4) Carries out factory equipment verification work 5) Arrange maintenance of equipment and machines	**Station Supervisor** 1) Receive Tobacco leaf from supplier 2) Coordination of work activities with team member 3) Determine store operation requirements and equipment 4) Carries out factory equipment verification work 5) Arrange maintenance of equipment and machines	NO LEVEL

Area	Tobacco Post-Harvest Operation Responsibilities May Includes	Tobacco Post-Harvest Operation Responsibilities May Includes	Tobacco Special Product Responsibilities May Includes
	6) Order 'Charcoal/ rubber wood' (for flame generation) and consumable item 7) Provide daily operations report	6) Order 'Charcoal/ rubber wood' (for flame generation) and consumable item 7) Provide daily operations report	
Level 2	**General Worker** 1) Classifies green tobacco leaves 2) Prepare the Leaf bundle (Bundela) 3) Slicing / cutting tobacco leaves 4) Separate / classify dried tobacco leaves 5) Maintaining the leaf quality level 6) Packing tobacco leaves according to customer requirements	**Durable House Guard** 1) Composing tobacco leaves 2) Provide material for burning process (e.g. Charcoal/ rubber wood) 3) Maintain 'Durable house' (Rumah awet) temperature at the required level 4) Determine the humidity in correct level 5) Discharge dry tobacco leaf	NO LEVEL
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

4.5 Mapping Occupational Structure VS Available NOSS

Table 4.28: Group 120 Occupational Structure VS Available NOSS (1 of 10)

SECTION	(C) MANUFACTURING					
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT					
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – KENAF MAT					
AREA	**Production Planning**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**	**Production Engineering**
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Factory Manager	Factory Manager	Factory Manager	Factory Manager	Factory Manager	Factory Manager
LEVEL 4	Senior Store Supervisor	Production Executive	Quality Control Executive	Binder / Standard Officer	EE-302-3:2014	EE-302-3:2014
LEVEL 3	FB-012-3:2009	Production Supervisor	AF-090-3:2010	Assistant Binder	Maintenance Supervisor	Maintenance Supervisor
LEVEL 2	Forklift Driver	Production Line Leader	AF-090-2:2010	No Level	Mechanical Technician	EE-310-2
LEVEL 1	No Level	Production Operator	No Level	No Level	No Level	No Level

Table 4.29: Group 120 Occupational Structure VS Available NOSS (2 of 10)

SECTION	(C) MANUFACTURING					
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT					
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – IBS WALL PANEL					
AREA	**Material & Production Planning**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**	**New Product Development**
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager
LEVEL 4	Assistant Operation Manager	Assistant Operation Manager	Assistant Operation Manager	Engineering Assistant Manager	Engineering Assistant Manager	Engineering Assistant Manager
LEVEL 3	FB-012-3:2009	Production Supervisor	AF-090-3:2010	F410-003-2:2017	Draughtman	MC-040-3:2013
LEVEL 2	Forklift Driver	Line Leader	AF-090-2:2010	Mechanical Technician	No Level	Product Development Assistant
LEVEL 1	No Level	Production Operator	No Level	No Level	No Level	No Level

Table 4.30: Group 120 Occupational Structure VS Available NOSS (3 of 10)

SECTION	(C) MANUFACTURING							
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT							
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – EXTRUSION & PULTRUSION							
AREA	**Material & Production Plan**	**Production Operation**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**	**Production Engineering**	**New Product Development**
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager
LEVEL 4	Assistant Operation Manager	Assistant Operation Manager	Assistant Operation Manager	Assistant Operation Manager	Engineering Assistant Manager	Engineering Assistant Manager	Engineering Assistant Manager	Engineering Assistant Manager
LEVEL 3	FB-012-3:2009	Production Supervisor Extrusion	Production Supervisor Pultrusion	AF-090-3:2010	F410-003-2:2017	Electrical Supervisor	Binder/ Standard Officer*	MC-040-3:2013
LEVEL 2	Forklift Driver	Line Leader Extrusion	Line Leader Pultrusion	AF-090-2:2010	Mechanical Technician	EE-310-2	Assistant Binder	Product Development Assistant
LEVEL 1	No Level	Production Operator	Production Operator	No Level	No Level	No Level	No Level	No Level

Table 4.31: Group 120 Occupational Structure VS Available NOSS (4 of 10)

SECTION	(C) MANUFACTURING					
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT					
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – BIODEGRADABLE UTENSILS (BDU)					
AREA	**Production Planning**	**Production Operation**	**Production Operation**	**Quality Control**	**Production Engineering**	**Production Engineering**
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager	Operation Manager
LEVEL 4	Production Planning Executive	Production Executive	Production Executive	Quality Control Executive	Maintenance Executive	Maintenance Executive
LEVEL 3	FB-012-3:2009	Production Supervisor – Pulp	Production Supervisor – Utensil	AF-090-3:2010	Maintenance Supervisor - Mechanical	Maintenance Supervisor - Electrical
LEVEL 2	Forklift Driver	Line Leader – Pulp	Line Leader – Utensil	AF-090-2:2010	Mechanical Technician	EE-310-2
LEVEL 1	No Level	Production Operator	Production Operator	No Level	No Level	No Level

Table 4.32: Group 120 Occupational Structure VS Available NOSS (5 of 10)

SECTION	(C) MANUFACTURING		
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT		
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – ANIMAL FOOD PELLET		
AREA	**Material Control**	**Production Operation**	**Quality Control**
LEVEL 8	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available
LEVEL 5	Factory Manager	Factory Manager	Factory Manager
LEVEL 4	Production Executive	Production Executive	Animal Food Nutritionist
LEVEL 3	FB-012-3:2009	Production Supervisor	Assistant Food Nutritionist
LEVEL 2	Forklift Driver	Machine Operator	No Level
LEVEL 1	No Level	No Level	No Level

Table 4.33: Group 120 Occupational Structure VS Available NOSS (6 of 10)

SECTION	(C) MANUFACTURING		
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT		
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – FIBRE & CORE (MECHANICAL)		
AREA	**Material Control**	**Production Operation**	**Quality Control**
LEVEL 8	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available
LEVEL 5	Factory Manager	Factory Manager	Factory Manager
LEVEL 4	Assistant Factory Manager	Assistant Factory Manager	Assistant Factory Manager
LEVEL 3	FB-012-3:2009	Production Supervisor	AF-090-3:2010
LEVEL 2	Forklift Driver	Machine Operator	No Level
LEVEL 1	No Level	No Level	No Level

Table 4.34: Group 120 Occupational Structure VS Available NOSS (7 of 10)

SECTION	(C) MANUFACTURING
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – FIBRE & CORE (BIO–RETTING)
AREA	**Production Operation**
LEVEL 8	Not Available
LEVEL 7	Not Available
LEVEL 6	Not Available
LEVEL 5	Factory Manager
LEVEL 4	Assistant Operation Manager
LEVEL 3	Production Supervisor
LEVEL 2	Bio–Retting Operator
LEVEL 1	No Level

Table 4.35: Group 120 Occupational Structure VS Available NOSS (8 of 10)

SECTION	(C) MANUFACTURING	
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT	
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – KENAF SEED	
AREA	**Production Operation**	**Quality Control**
LEVEL 8	Not Available	Not Available
LEVEL 7	Not Available	Not Available
LEVEL 6	Not Available	Not Available
LEVEL 5	Factory Manager	Factory Manager
LEVEL 4	Assistant Factory Manager	Assistant Factory Manager
LEVEL 3	Production Supervisor	Laboratory Assistant
LEVEL 2	Factory Operator	Laboratory General Worker
LEVEL 1	No Level	No Level

Table 4.36: Group 120 Occupational Structure VS Available NOSS (9 of 10)

SECTION	(C) MANUFACTURING
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – ANIMAL BEDDING
AREA	**Production Operation**
LEVEL 8	Not Available
LEVEL 7	Not Available
LEVEL 6	Not Available
LEVEL 5	Factory Manager
LEVEL 4	Assistant Operation Manager
LEVEL 3	Production Supervisor
LEVEL 2	Animal Bedding Operator
LEVEL 1	No Level

Table 4.37: Group 120 Occupational Structure VS Available NOSS (10 of 10)

SECTION	(C) MANUFACTURING		
DIVISION	(12) MANUFACTURE OF KENAF/TOBACCO PRODUCT		
GROUP	(120) MANUFACTURE OF KENAF/TOBACCO PRODUCT – TOBACCO AND CIGAR		
AREA	Tobacco Post-Harvest Operation	Tobacco Post-Harvest Operation	Tobacco Special Product
LEVEL 8	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available
LEVEL 6	Not Available	Not Available	Not Available
LEVEL 5	Not Available	Not Available	Cigar Specialist (Leaf Cigarette)
LEVEL 4	Station Manager	Station Manager	Assistant Specialist
LEVEL 3	Station Supervisor	Station Supervisor	No Level
LEVEL 2	General Worker	Durable House Guard	No Level
LEVEL 1	No Level	No Level	No Level

4.6 Occupational Description (OD)

Occupational of Job Description is a broad, general, and written statement of a specific job, based on the findings of a job analysis. It generally includes duties, purpose, responsibilities, scope, and working conditions of a job along with the job's title, and the name or designation of the person to whom the employee reports. The Occupational Description provided in Annex 4 are the job titles that have been identified as critical or hard-to-fill job as suggested by Critical Skills Monitoring Committee (CSC) and industry representatives from focus group.

4.7 Skills in Demand

This section elaborates on the survey findings regarding jobs and skills in demand.

i. Jobs in Demand

The jobs in demand as stated below were obtained from survey findings and discussion in development workshops.

Table 4.38: Job in demand

No.	Sub-sector - Job Area / Job titles	Factor(s) contributing to the demand	Specific requirements and skills
1.	Marketing Manager - Kenaf semi-product	Lack of promotion and communication and update information regards market requirement/ feedback	• Communication skills • Able to interpret instructions and simple diagrams (i.e. trends) • Skills in utilising basic computer function especially on presentation software/ tools • Technically sound on product of Kenaf
2.	Binder/ Engineer	Lack of expertise who able to do mixture between Chemical Bonding and the Core Kenaf	• Communication skills • Able to interpret instructions, simple diagrams and engineering drawing • Skills in utilising basic computer function on search tools related to Binder technology. • Understand on behaviour of Chemical Binder and usage of Kenaf product.
3.	Executive – Research Officer	• No specific officer to do Research & Development on the Kenaf seeds suitability to market requirement. • Lack on R&D to get	• Technical skills in operating and handling equipment • Basic Kenaf product knowledge and purpose. • Possesses knowledge on current

		correct process and competitive price as required by industry.	Binding technology • Team work, leadership skills and communication skills • Possesses knowledge on Kenaf growing • Analytical skills
4.	Manager Human Resource	Inability to convince Top management to recruit Research & Development Officer on the Kenaf development	• Communication and convincing skills • Skills in utilising basic computer function on presentation skill/ tools • Skill on body language • Alert on environment development

ii. Skills Gaps

In addition to category of workers in demand as highlighted above, the Kenaf Industry is in demand of workers who demonstrate the skills below:

Table 4.39: Skill Gap

No.	Sub-sector - Job Area/ Job titles	Factor(s) contributing to the demand	Specific requirements and skills
1.	Technical skill and knowhow in evaluating proposal from supplier, especially on machine and process to produce Kenaf product		
	Executive/Engineer to Manager level	• No structured system to transfer skill to new successor • Lack of exposure on process and related machine • Lack of hands on experience on process	• Training on related or similar process • Review of training syllabus at training centre/ provider • Joint venture with industry player to provide facilities and exposure • Invite industry player to jointly do R&D • Collaborate with overseas Kenaf R&D centre.
2.	Safety procedure in handling Kenaf Core and Fibre		
	Overall for all job areas from Operator to management level	No established written procedure on handling such product	• Establish a team to study on Kenaf Core and Fibre characteristic • Produce procedure on Safety Kenaf handling • Obtain endorsement from Certified

			body of the procedure • Disseminate the procedure to all staff related to Kenaf process, including 'takers'
3.	Engineering Kenaf material		
	Executive/ Researcher level	Lack of knowhow on material and characteristic to produce product at right process and competitive price	• Appoint person to do R&D on Kenaf and their related process • Build relationship with industry player to gain feedback – related to Kenaf • Subscribe Technical paper or Journal on Kenaf material and product.
4.	Kenaf behaviour and characteristic.		
	Researcher level	Inability to determine correct process of Kenaf growing, process and handling of Kenaf and Kenaf product	• Appoint person to study and understand the process related to Kenaf, including seeds/ growing and product suitability. • Establish process parameter on related process • Study correct method to handle Kenaf and Kenaf product

iii. Emerging Skills

The following are emerging skills as highlighted by the industry:

Table 4.40: Emerging Skills

No.	EMERGING SKILLS	JOB AREAS/ JOB TITLES	REASON OF REQUIRED EMERGING SKILLS
1.	IR 4.0 related skills – Utilization of automation systems which include ability to configure, utilise, debug, maintain the system	Production, Manufacturing Engineering, Process Engineering, Machine maintenance	• Increase productivity, reduce cost and improve efficiency (increase OEE) • To minimize human error • Reduce machine down time • Fast decision making • Increase machine and process effectiveness
2.	Innovation – for continuous	Production, Manufacturing Engineering, Process	• Increase productivity, reduce

No.	EMERGING SKILLS	JOB AREAS/ JOB TITLES	REASON OF REQUIRED EMERGING SKILLS
	improvement, Kaizen Skills, VA/VE	Engineering from Operator to Manager level	cost and improve efficiency • To enhance capability to optimize resources and new technology • Eliminate manufacturing waste • Improve process • Resource alternative material or process to minimize cost.

4.8 Chapter Summary

Based on the discussions with panel members during the development workshops and survey findings, the OS of the industry is produced in this chapter. The OS would provide information of the competency or job areas applicable to the industry, and the skill level of the different job titles, according to the MOSQF Level Descriptors, and the available career paths.

The jobs and skills in demand, and the specific steps proposed to be taken by various parties to bridge the skills gaps are elaborated so that the parties concerned could take the necessary steps to overcome such challenges.

CHAPTER 5:
DISCUSSION, RECOMMENDATION AND CONCLUSION

5.1 Discussion

Based on the findings obtained throughout the Occupational Analysis on the industry, 9 sub sectors have been identified and confirmed to be in tandem with MSIC. The job titles identified require a holistic view in development of standard, skills training and also certification for recognition. If the competency requirements documented in NOSS format, the personnel in these areas will obtain a more structured skills training and will also enable personnel who are experienced and skilled to be certified.

5.2 Recommendation

It is hoped that the result of this Occupational Framework will be used as reference to fulfil the future plans of developing skilled personnel and certifying Malaysians in this sector towards improving the quality of the local sector and thus spurring Malaysia's global competitiveness.

There are several options when addressing or mitigating workforce demand and supply. It may include establishing and maintaining partnerships with other agencies or departments, or educational institutions to increase external talent pools and also through the training of existing staff in line with new skills requirements.

Based on the above comments, specific recommendations are listed below:

i) To continue and streamline efforts in NOSS development for areas under the sector in line with the findings of this analysis. This includes the development of the NOSS for the sectors and sub-sectors that are in demand and have not been developed.
ii) To encourage apprenticeship training (National Dual Training System –NDTS) for the related sub sector and job area.
iii) Promote certification of existing and experienced personnel in the sector through Accreditation via Prior Learning (*Pengiktirafan Pencapaian Terdahulu* – PPT).

5.3 Conclusion

The conclusion is based on the specified objectives of the Occupational Framework as elaborated below:

Objective 1: Occupational Structure

As a result of the Kenaf/ Tobacco Sector Occupational Framework conducted together with expert panel members from various organizations, a total of 9 sub-sectors and 102 job titles have been identified. By planning and conducting the training and certification of this sector personnel in the near future, it is hoped that there will be a steady flow of local skilled and certified workers.

Objective 2: Occupational Descriptions

The Occupational Descriptions for all the different job titles were obtained during the workshops and further confirmed during the survey. These Occupational Descriptions will also serve as reference of job scope and the required competencies for NOSS development.

Objective 3: Skills in Demand

Based on the survey findings, the survey respondents highlighted the skills in demand are as follows:

- Sales and upselling skills
- Communication skills
- Product knowledge
- Customer service skills
- General attitude towards work (commitment, resourcefulness, teamwork, etc.)
- Diagnostic skills
- Troubleshooting / problem solving skills
- Strong technical aptitude / manual dexterity
- Competent in using computerized / other mechanical devices
- English language competency

Troubleshooting / problem solving skills, Strong technical aptitude / manual dexterity, and Product knowledge are the top 3 skills in high demand by the industry. The skills above are encouraged to be included in the training curriculum according to the respective areas.

Critical Job Titles

The respondents and Focus Group Discussion members have reviewed the list and specified the critical job titles as in the table below.

Table 5.1: List of Critical Job Titles

No	Critical Job Title	Group/Area	Level	Priority
1	Quality Control Supervisor	120/Quality Control	3	3
2	Production Executive	120/Production Operation	4	3
3	Quality Control Executive	120/Quality Control	4	1
4	Binder / Standard Officer	120/Production Engineering	4	1
5	Chargeman	120/Production Engineering	4	4
6	Production Supervisor	120/Production Operation	3	3
7	Quality Control Supervisor	120/Quality Control	3	2
8	Draughtman	120/Production Engineering	3	3
9	Product Development Supervisor	120/Product Development	3	3
10	Assistant Operation Manager	120/Material & Production Planning	4	4
11	Assistant Operation Manager	120/Production Operation	4	2
12	Assistant Operation Manager	120/Quality Control	4	4
13	Engineering Assistant Manager	120/Production Engineering	4	5
14	Engineering Assistant	120/New Product	4	5

No	Critical Job Title	Group/Area	Level	Priority
	Manager	Development		
15	Production Supervisor – Extrusion	120/Production Operation	3	3
16	Production Supervisor – Pultrusion	120/Production Operation	3	2
17	Quality Control Supervisor	120/Quality Control	3	1
18	Binder/Standard Officer	120/Production Engineering	3	1
19	Production Supervisor – Pulp	120/Production Operation	3	1
20	Production Supervisor – Utensils	120/ Production Operation	3	3
21	Quality Control Supervisor	120/Quality Control	3	2
22	Production Executive	120/ Production Operation	4	3
23	Quality Control Executive	120/Quality Control	4	2
24	Production Supervisor	120/Production Operation	3	5
25	Production Executive	120/Production Executive	4	4
26	Animal Food Nutritionist	120/Quality Control	4	2
27	Production Supervisor	120/Production Operation	3	5
28	Quality Control Supervisor	120/Quality Control	3	4
29	Assistant Factory Manager	120/Production Operation	4	5
30	Assistant Factory Manager	120/Quality Control	4	4
31	Production Supervisor	120/Production Operation	3	5
32	Assistant Factory Manager	120/Production Operation	4	1
33	Laboratory Assistant	120/Quality Control	3	2

No	Critical Job Title	Group/Area	Level	Priority
34	Assistant Factory Manager	120/Production Operation	4	4
35	Assistant Factory Manager	120/Quality Control	4	4
36	Production Supervisor	120/Production Operation	3	4
37	Assistant Operation Manager	120/Production Operation	4	5

- Note of priority; 1 = Very important, 5 = Less important

Overall Conclusion

Several essential steps need to be undertaken jointly by stakeholders from industry, training/academic institutions and the relevant accreditations authorities to review that the critical occupation needs of industry are addressed.

The broad direction for achieving this:

i) Identify and assess the qualifications, National Occupational Skills Standard (NOSS), and competencies associated with the identified critical job titles.
ii) Align and evaluate the existing training curriculum and training packages.
iii) Coordination among stakeholder to
- Revise or develop required curriculum and training packages
- Expand or create new apprenticeships/ internships / attachments schemes
- Joint technology and knowledge transfer between instructor / training entities with industry experts

The result of this Occupational Framework research and development work will be able to be used as a reference as how to fulfil the future plans of developing skilled personnel and certifying Malaysians in the Kenaf/ Tobacco Sector towards enhancing services provided by the sector players.

REFERENCE

1. *Department of Occupational Safety and Health (DOSH)*. (10th August 2018). Retrieved from http://www.dosh.gov.my/index.php/eNo Level legislation/acts
2. *Malaysian Investment Development Authority (MIDA).* (2018, August 10th). Retrieved from http://www.mida.gov.my
3. *Ministry of Agriculture & Agro-Based Industry (MOA).* (2018, August 10th). Retrieved from http://www.moa.gov.my
4. *Department of Environment (DOE)*. (2018, August 10th) Retrieved from https://www.doe.gov.my
5. *Department of Agriculture (DOA).* (2018, August 10th) Retrieved from http://www.doa.gov.my
6. *Malaysian Quarantine Inspection Services (MAQIS).* (2018, August 10th) Retrieved from http://www.maqis.gov.my
7. *Malaysian Agricultural Research and Development Institute (MARDI).* (2018, August 10th). Retrieved from http://www.mardi.gov.my
8. *Tobacco Law Control, Legislation by Country Malaysia.* (2018, August 10th). Retrieved from https://www.tobaccocontrollaws.org/legislation/country/malaysia/summary
9. *Eleventh Malaysia Plan. Chapter 8: Re-engineering economic growth for greater prosperity*. Focus area B Energising manufacturing. Page 242-258.
10. Monthly Manufacturing Statistics, Malaysia. Jun 2018. Page 4-6.
11. Evarina Amiron. Banking Industry Occupational Framework. 2016.

ANNEX 1:
MOSQF LEVEL DESCRIPTORS

Level	Level Description
8	Achievement at this level reflects the ability to develop original understanding and extend a sub-area of knowledge or professional practice. It reflects the ability to address problematic situations that involve many complexes, interacting factors through initiating, designing and undertaking research, development or strategic activities. It involves the exercise of broad autonomy, judgement and leadership in sharing responsibility for the development of a field of work or knowledge, or for creating substantial professional or organisational change. It also reflects a critical understanding of relevant theoretical and methodological perspectives and how they affect the field of knowledge or work.
7	Achievement at this level reflects the ability to reformulate and use relevant understanding, methodologies and approaches to address problematic situations that involve many interacting factors. It includes taking responsibility for planning and developing courses of action that initiate or underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of theoretical and relevant methodological perspectives, and how they affect their sub-area of study or work.
6	Achievement at this level reflects the ability to refine and use relevant understanding, methods and skills to address complex problems that have limited definition. It includes taking responsibility for planning and developing courses of action that are able to underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of different perspectives, approaches of schools of thought and the theories that underpin them.
5	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address broadly-defined, complex problems. It includes taking responsibility for planning and developing courses of action as well as exercising autonomy and judgment within broad parameters. It also reflects understanding of different perspectives, approaches or schools of thought and the reasoning behind them.

4	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address problems that are well defined but complex and non-routine. It includes taking responsibility for overall courses of action as well as exercising autonomy and judgment within fairly broad parameters. It also reflects under-standing of different perspective or approaches within a sub-area of study or work.
3	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to complete task and address problems that are well defined with a measure of complexity. It includes taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgments within limited parameter. It also reflects awareness of different perspectives or approaches within a sub-area of study or work.
2	Achievement at this level reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problem. It includes taking responsibility for completing tasks and procedures, and exercising autonomy and judgment subject to overall direction or guidance.
1	Achievement at this level reflects the ability to use relevant knowledge, skills and procedures to complete routine and predictable tasks that include responsibility for completing tasks and procedures subject to direction or guidance.

ANNEX 2:
LIST OF CONTRIBUTORS

LIST OF SECTOR PANEL MEMBERS FOR THE MANUFACTURE OF KENAF/TOBACCO FRAMEWORK DEVELOPMENT

NO	NAME	EXPERTISE	POSITION	ORGANISATION
1	Mohd Fajrol Zakuan Bin Mohd Yussof	Tobacco & Kenaf	Pengarah Negeri	LKTN, KEDAH
2	Mohd Azizi Bin Awang	Tobacco & Kenaf	Pen. Pegawai Ehwal Ekonomi	LKTN, HQ
3	Mohd Kamil Bin Ismail	Tobacco & Kenaf	Penolong Pegawai Sains	UPM, SERDANG
4	Mohd Norsyam Bin Yahaya	Tobacco & Kenaf	Pengarah Negeri	LKTN, TERENGGANU
5	Nik Norhisham Bin Nik Yaacob	Tobacco & Kenaf	Pen. Pegawai Ehwal Ekonomi	LKTN, HQ
6	Haji Abdul Hadi Bin Hassan	Tobacco & Kenaf	Pengarah Negeri	LKTN, JOHOR

LIST OF OCCUPATIONAL FRAMEWORK TECHNICAL EVALUATION COMMITTEE

NO	NAME	ORGANISATION
1	Mohd Fadzhel Mohd Nasir	Lembaga Kenaf dan Tembakau Negara
2	Hj Rosli Bin Hj Jamaluddin	Group Components Automotive Sdn Bhd

LIST OF DEPARTMENTS OF SKILLS DEVELOPMENT (DSD) OFFICERS INVOLVED IN OCCUPATIONAL FRAMEWORK DEVELOPMENT

NO	NAME	ORGANISATION
1	Mohd. Yazid Bin Awalludin	Director NOSS Division Department of Skills Development
2	Siti Hasmah Binti Mustapa	Chief Assistant Director Department of Skills Development
3	Noorita Binti Lateh	Senior Assistant Director Department of Skills Development
4	Noor Azura Binti Adnan	Senior Assistant Director Department of Skills Development
5	Jefrizain Bin Abdul Rasid	Assistant Director Department of Skills Development
6	Ahmad Azran Bin Ranaai	Assistant Director Department of Skills Development
7	Zainal Bin Abd Jalil	Senior Assistant Skills Officer Department of Skills Development

LIST OF INDUSTRY LEAD BODY (ILB) OFFICERS INVOLVED IN OCCUPATIONAL FRAMEWORK DEVELOPMENT

NO	NAME	ORGANISATION
1	Mohd Solah Deraman	Chief Executive Officer Institute of Malaysian Plantation And Commodities (IMPAC)
2	Nur Dalilah Termizi	Administrative Officer Institute of Malaysian Plantation And Commodities (IMPAC)

LIST OF RESEARCH TEAM AND SECRETARIAT

NO	NAME	POSITION/ ORGANISATION
1	Ah Faezal Husni	Project Leader
2	Cristnorish Lianu	Project Manager
3	Marlina Binti Zulkafli	Secretariat
4	Mastura Liza Binti Muhammad	Secretariat
5	Zalaludin Bin Slamat	Facilitator
6	Amir Asyraf Bin Abdul Rahman	Researcher

ANNEX 3:
QUESTIONNAIRE

Manufacture of Kenaf/Tobacco Products Industry Occupational Framework Survey

The Department of Skills Development (DSD), Ministry of Human Resources is currently conducting an analysis on the Occupational Framework of the Industry. From this analysis, the industry framework, occupational structure, occupational job titles, and job description will be summarised for the use of the government, private sector, investors, employers, employees, educators or any personnel involved either directly or indirectly with the industry.

The main objective of this research is to enhance skills training starting from the entry level position for any job in this industry based on input from the industry. It will also provide a reference competency for skills required by workers to perform as required in the industry.

This survey will be used as field data in order to conduct a comprehensive analysis of the industry's Occupational Framework. The target group for this survey is the organisation's representative either from the Human Resource Department or personnel at Management level.

We would like to extend our heartfelt gratitude upon your cooperation in answering this survey. Please fill in where necessary in the forms provided. Do advise us if you wish to remain anonymous in your survey response. There will be further communication with survey respondents in order to verify our findings. The completed questionnaire can be emailed to:

Amir Asyraf bin Abdul Rahman: amir950213@gmail.com

Survey Respondent Details

Name :

Position :

Organisation :

Date :

Please answer the questions below in the space provided, additional pages may be added if necessary. There are 4 SECTIONS in this 8 PAGES survey.

SECTION 1: COMPETENCY IN DEMAND

1.1 Listed below are set of skills related to personnel involve in **manufacture of Kenaf/ Tobacco products.** Rate the level of demand to the set of skills by using the scale below:

1	2	3	4
Not In Demand	**Low In Demand**	**In Demand**	**High In Demand**

No	Competency	Low Skilled Workers	High Skilled Workers
1	Machine handling skills		
2	Communication skills		
3	Diagnostic skills		
4	Troubleshooting / problem solving skills		
5	Administration skills		
6	Product design skills		
7	Data collection and sorting skills		
8	Prediction and Forecasting abilities		
9	Laboratory work skills		
10	Leadership		
11	General attitude towards work (commitment, resourcefulness, teamwork, etc.)		
12	Product expertise		
13	Material approach knowledge		
14	Strong technical aptitude / manual dexterity		
15	Competent in using computerized / other mechanical devices		
16	English language competency		

1.2 Based on your observation, do you think the graduates / trainee / apprentice / current workers possess the skills required by the industry? If 'No' please respond to the following questions (Question 1.3 & 1.4).

[__] Yes

[__] No

1.3 What is/are the reason/s for the skills gap? Tick (√) where applicable, you may tick more than once.

[__] Education / training mismatch

[__] Major changes in traditional training and new skill requirements

[__] Attitude (e.g. lack of desire to work)

[__] Gap between technology and skills

[__] Lack of knowledge

[__] other; please specify: ……

1.4 What is/are solution/s for the skills gap would you recommend? Tick (√) where applicable, you may tick more than once.

[__] Workload management

[__] Upgrade trainer qualification

[__] Review employment policy (e.g. enhance skilled workers incentives)

[__] Training / retraining

[__] Review skills training curriculum

[__] Formal mentoring and/or coaching

[__] other; please specify: ……

SECTION 2: JOBS IN DEMAND

2.1 Listed below are job areas and description of category of skills. Based on your observation, which job area is experiencing **shortage of manpower in manufacture of kenaf/tobacco products industry**?

Tick (√) where applicable.

Category of Skills	Description
Skilled Workers	Managers, Professionals, Technicians and Associate Professionals
Semi-Skilled Workers	Clerical Support, Service and Sales, Craft and related Trades Workers and Plant and Machine Operators and Assemblers
Low Skilled Workers	Elementary Workers

No.	Job Areas & Category of Skills	High Shortage	Mid Shortage	Low Shortage	No Shortage
1	**Manufacture of Kenaf/ Tobacco products**				
	a) Skilled Workers				
	b) Semi-Skilled Workers				
	c) Low Skilled Workers				

SECTION 3: EMERGING SKILLS

(Note: Emerging Skills are skills that are predicted to be imperative to the industry in the near future based on recent development, trend or study)

3.1 Do you think Industry Revolution 4.0 (Digitalization) (IR4.0) would give an impact to the economic activities of manufacture of Kenaf/ Tobacco products industry?

[__] Yes

[__] No

[__] Not sure

3.2 Listed below are the nine (9) technology drives/pillars of IR 4.0. Which job area is likely to be affected by these 9 technology drives/pillars of IR 4.0?

Tick (√) where applicable, you may tick more than once.

No.	TECHNOLOGY DRIVES / PILLARS	JOB AREAS
		Manufacture of Kenaf/Tobacco product
1	**Autonomous Robots** (coordinated and automated actions of robots to complete tasks intelligently, with minimal human input)	
2	**Big Data Analytics** (the analysis of ever larger volumes of data. Circulation, collection, and analysis of information is a necessity because it supports productivity growth based on a real-time decision-making process)	
3	**Cloud Computing** (storing and accessing data and programs over the Internet instead of your computer's hard drive)	
4	**Internet of Things (IoT)** (all machines and systems connected to the production plant (as well as other systems) must be able to collect, exchange and save these massive volumes of information, in a completely autonomous way and without the need of human intervention)	
5	**Additive Manufacturing (3D Printing)** (use in prototyping, design iteration and small-scale production and often described as "rapid prototyping" - produce the desired components faster, more flexibly and more precisely than ever before)	
6	**System Integration** (the process of linking together different computing systems and software applications physically or functionally to act as a coordinated whole via Internet of Things-IoT)	
7	**Cybersecurity** (with the increased connectivity and use of standard communications protocols, the need to protect critical industrial systems and manufacturing lines from cybersecurity threats is increasing)	

8	**Augmented Reality** (Augmented-reality-based systems support a variety of services, such as selecting parts in a warehouse and sending repair instructions over mobile devices - provide workers with real-time information to improve decision making and work procedures)	
9	**Simulation** (simulations will leverage real-time data to mirror the physical world in a virtual model, which can include machines, products, and humans. This allows operators to test and optimize the machine settings for the next product in line in the virtual world before the physical changeover, thereby driving down machine setup times and increasing quality)	

3.3 Table 2 is the list of important prerequisite and skills required in order to equip the workforce for IR 4.0. Select prerequisite and skills that are relevant to the job area. Tick (√) where applicable, you may tick more than once.

Table 2: The description of important prerequisite and skills for workforce in the age of IR4.0 published in Skill Development for Industry 4.0 Whitepaper by Roland Berger GMBH in 2016

PREREQUISITE & SKILLS	KNOWLEDGE ABOUT ICT	ABILITY TO WORK WITH DATA	TECHNICAL KNOW-HOW	PERSONAL SKILLS
DETAILS	▪ Basic Information Technology knowledge ▪ Ability to use and interact with computers and smart machines like robots, tablets etc. ▪ Understanding machine to machine communication, IT security & data protection	▪ Ability to process and analyze data and information obtained from machines ▪ Understanding visual data output & making decisions ▪ Basic statistical knowledge	▪ Inter-disciplinary & generic knowledge about technology ▪ Specialized knowledge about manufacturing activities and processes in place ▪ Technical know-how of machines to carry out maintenance related activities	▪ Adaptability & ability to change ▪ Decision making ▪ Working in team ▪ Communication skills ▪ Mindset change for lifelong learning

No.	Job Areas	IMPORTANT PREREQUISITE AND SKILLS FOR IR4.0			
		KNOWLEDGE ABOUT ICT	ABILITY TO WORK WITH DATA	TECHNICAL KNOW-HOW	PERSONAL SKILLS
1	Manufacture of Kenaf/tobacco products				

SECTION 4: RELATED ISSUES

4.1 What is/are the key issue/s related to manufacture of Kenaf/ Tobacco products industry?

Please rate **ALL** the key issues by using the scale below.

1	2	3	4
Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**

No	KEY ISSUES	JOB AREAS Manufacture of Kenaf/Tobacco product
1	Insufficient manpower	
2	Low skilled and low performance workforce	
3	High dependency on foreign labour	
4	Underpayment of wages lead to high turn over	
5	Quality inconsistency (product & services)	
6	Maintaining profitability	
7	Economic conditions	
8	Government policy/regulation	
9	Labour costs (wages)	
10	Labour costs (sub-contractors)	
11	Technological change	
12	Youth Involvement	
13	Lack of infrastructure support	
14	Poor facilities and amenities for worker	
15	Insufficient of extension officer services	
16	Lack of R&D especially on seeds development and kenaf growing suitable for kenaf usage	
17	Less promotion on kenaf usage advantage	
18	Lack of Kenaf supply to be used by industry	

End of Questionnaire

ANNEX 4:

OCCUPATIONAL DESCRIPTIONS (OD)

SECTION : (C) MANUFACTURING

DIVISION : (12) MANUFACTURE OF KENAF/TOBACCO PRODUCT

GROUP : (120) MANUFACTURE OF KENAF/TOBACCO PRODUCT

MSIC GROUP : 120

AREA : QUALITY CONTROL (KENAF MAT)

LEVEL : 3

Responsibilities

The Quality Control Supervisor is responsible to oversees and monitors the inspection and testing of materials, parts, and products to review adherence to specification. Execute inspection activity including Bonding mixture, defines sampling procedures, and determines equipment and apparatus to be used in the testing process. Recommend changes of specifications materials, parts, and products based on analysis results. May suggest revise quality control policies and procedures.

Knowledge:

- Instructions and working procedure
- Bonding agent, fiber and core mixing
- Testing procedures and results
- Physical and mechanical tests on Kenaf mat (Strength, Dimensional, Cleanliness)
- Company safety, rules & regulations
- QMS policy and procedure (ISO, OHSAS etc.)
- English language including the spelling, rules of composition and grammar

Skills:

- Operate measuring and equipment tool for product test
- Carry out test to product
- Leadership skills
- Report writing and presentation skills
- Analysis of data and do conclusion
- Self-Development skills
- Supervisory skill

Attributes (Attitude/Safety/Environmental):

- Detail in performing part inspection
- Meticulous in evaluate parts data
- Adhere to safety regulations, production quality standard
- Good communication with subordinates
- Strong interpersonal skills
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (KENAF MAT)

LEVEL : 4

Responsibilities

The Production Executive is responsible to generate production plan as customer demand, arrange manpower for operation, monitor production progress, review adherences to process parameter, verify Bonding agent formula, confirm compliances to production machine parameter setting and review tool and equipment in good order.

Knowledge:

- Production plan generation and monitoring
- Thermo-bonding production process
- Production machine parameter setting
- Inspection element and specification
- Machine and equipment usage for production
- Efficiency and downtime calculation
- Safe working environment
- Material and consumables usage
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision-making
- Strong communication with down liner and superior
- Monitoring production progress.
- Leadership skills
- Reporting and presentation
- Analysis of production data and do corrective action
- Measuring production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Alert on production abnormalities
- Ability to work under pressure and independently
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : QUALITY CONTROL (KENAF MAT)

LEVEL : 4

Responsibilities

The Quality Control Executive is responsible to oversees and monitors the inspection of product tested by Quality Control Supervisor according to specification. Establish inspection items, defines sampling procedures, determine equipment and apparatus to be used in the inspection. Recommend changes in specifications of materials, parts and products based on inspection results and analysis.

Knowledge:

- Instructions and working procedure
- Raw materials and Bonding agent chemical content
- Testing and inspection procedures
- Thermo-bonding process and quality control
- Physical and mechanical tests on Kenaf mat (Strength, Dimensional, Cleanliness)
- Analysis of inspection data
- QMS policy and procedure (ISO, OHSAS etc.)
- Company safety, rules & regulations
- English language including the spelling, rules of composition and grammar

Skills:

- Handle measurement and equipment tools
- Planning test for product
- Leadership and self-development skills
- Report writing and presentation skills
- Analysis of data and finalize conclusion
- Customer orientation skills

Attributes (Attitude/Safety/Environmental):

- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- High level of commitment and strong team player
- Ability to work under pressure
- Ability to adapt with workplace environment
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : PRODUCTION ENGINEERING (KENAF MAT)

LEVEL : 4

Responsibilities

The Binder / Standard Officer is responsible to design a material formulation for product, establishing a production process, establishing a quality inspection procedure (SOP) for a formulation / product, produce a list of materials needed for production purposes, ensure compliances product to rule and regulations, communicate with others department for specification updates, perform data retrieval and analysis for improvements.

Knowledge:

- Instructions and working procedure
- Binder agent and characteristic
- Bonding agent technologies update
- Testing procedures and review result
- Machinery and equipment for operation
- Company safety, rules & regulations
- Equipment to the design and production
- English language including the spelling, rules of composition and grammar

Skills:

- Handle measurement and equipment tools for product
- Planning for product testing and inspection
- Develop new formulation for bonding agent
- Leadership and self-development skills
- Report writing and presentation skills
- Analysis of data and finalize conclusion

Attributes (Attitude/Safety/Environmental):

- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with supplier and superior
- High level of commitment and strong team player
- Ability to work under pressure
- Ability to adapt with workplace environment
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : PRODUCTION ENGINEERING (KENAF MAT)

LEVEL : 4

Responsibilities

The Chargeman is responsible to review all related electrical supply are dead, discharge and earthed/ locked. He/she shall review all safety procedures, PPE usage and method of handling electrical works. He/she has authority on mechanical & electrical equipment's maintenance, such as plan preventive maintenance, predictive maintenance, repair maintenance, building maintenance, troubleshooting and modification of mechanical & electrical equipment

Knowledge:

- Tools, equipment and component for maintenance work
- Instructions and working procedure
- Rule and regulation on handling High voltage electrical supply
- Company safety, rules & regulations
- Tests procedures and results
- Components diagnostics and troubleshooting
- Rule and regulation for statutory and regulatory bodies
- English language including the spelling, rules of composition and grammar

Skills:

- Selection of tools, equipment and component for maintenance work
- Generate instructions and working procedure
- Analyse record maintenance works
- Diagnostically troubleshoot component defects
- Set up test units for performing equipment tests
- Report writing and presentation skills

Attributes (Attitude/Safety/Environmental):

- Adhere to safety rule and regulation
- Knowledgeable and professionalism in work
- Alert on abnormalities related to electrical supply
- Strong interpersonal skills with good attention to details
- Good communication with statutory a regulatory body
- High level of commitment and strong team player
- Ability to work under pressure
- Ability to adapt with workplace environment and corporate with another work

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (IBS WALL PANEL)

LEVEL : 3

Responsibilities

The Production Supervisor is responsible to verify machine and equipment usage, confirm the Bonding agent and Filler formula, arrange production run as SOP, verify the part handling procedure, monitor production progress, perform part inspection as specification and review PPE usage for production operator.

Knowledge:

- Machinery and equipment function
- Bonding agent and filler usage and function.
- Demand from customer
- Instructions and working procedure
- Testing procedures and results
- Company safety, rules & regulations
- Workforce requirement for each section
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production.

Skills:

- Monitoring production performance
- Selection of tools and equipment for production
- Determine the machine parameter
- Usage of measuring tools and equipment
- Leadership and self-development skills
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Adhere to safety regulations and production quality standard
- Detail in checking production performance
- High level of commitment and strong team player
- Meticulous in checking inspection data
- Good communication with subordinates
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : QUALITY CONTROL (IBS WALL PANEL)

LEVEL : 3

Responsibilities

The Quality Control Supervisor is responsible to oversees and monitors the inspection and testing of materials, parts and products. Verify inspection activity including Bonding mixture, defines sampling procedures, determines equipment and apparatus to be used in the inspection and testing. He/she may recommend changes of specifications materials, parts and products based on inspection results and analysis.

Knowledge:

- Instructions and working procedure
- Bonding agent and filler mixing
- Bonding agent and filler chemical content
- Testing procedures and results
- Product quality tests (dimensional, strength, durability, thickness)
- Company safety, rules & regulations
- QMS policy and procedure (ISO, OHSAS etc.)
- English language including the spelling, rules of composition and grammar

Skills:

- Operate measuring and equipment tools for product test
- Carry out product test
- Leadership skills
- Report writing and presentation skills
- Analysis of data and do conclusion
- Self-Development skills
- Supervisory skill
- Customer orientation skills

Attributes (Attitude/Safety/Environmental):

- Detail in performing part inspection
- Meticulous in evaluate parts data
- Adhere to safety regulations, production quality standard
- Good communication with subordinates
- Strong interpersonal skills
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION ENGINEERING (IBS WALL PANEL)

LEVEL : 3

Responsibilities

The Draughtman is responsible to seek description and specifications from Engineering Assistant Manager, draws a technical plan/ drawing according to the designated design and size, print the plan/ drawing, compiling and updating completed drawings and ensure the design software is up to date and legally use

Knowledge:

- Building construction drawing
- IBS wall panel part assembly and matching
- Instructions and working procedure
- Drawing and design software
- Equipment and measuring tools
- Company safety, rules & regulations
- English language including the spelling, rules of composition and grammar

Skills:

- Select equipment and measuring tools for product designing
- Design IBS wall panel product
- Interpret construction and engineering drawing
- Self-development skills
- Report writing and presentation skills
- Customer orientation skills

Attributes (Attitude/Safety/Environmental):

- Strong interpersonal skills with good attention to details
- Good communication with superior
- Meticulous in do measurement and produce drawing
- High level of commitment and strong team player
- Ability to work under pressure and independently
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : NEW PRODUCT DEVELOPMENT (IBS WALL PANEL)

LEVEL : 3

Responsibilities

The Product Development Supervisor is responsible to supervising on the development of new IBS wall panel product samples (prototypes) including of matching and fitting, improve existing products performance, review adequate material and equipment upon completion of development process, establishing the list of ingredients needed for production purposes, and do analysis for improvements

Knowledge:

- IBS wall panel characteristic
- Building construction process and procedure
- IBS wall panel assembly and matching
- Equipment and measuring tools usage
- Instructions and working procedure
- Company safety, rules & regulations
- New IBS material and ingredient
- Testing process and procedures
- English language including the spelling, rules of composition and grammar

Skills:

- Use of measuring tool and equipment
- Determine instructions and working procedure
- Monitoring product development progress
- Arrange IBS wall panel fitting and matching
- Presentation skill on prod development progress
- Monitor and record the product development test

Attributes (Attitude/Safety/Environmental):

- Strong interpersonal skills with good attention to details
- Good communication with others and subordinates
- Meticulous in generate specification
- Proactive in handling subordinates works.
- High level of commitment and strong team player
- Ability to work under pressure and independently
- Ability to adapt with workplace environment
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : MATERIAL & PRODUCTION PLANNING (IBS WALL PANEL)

LEVEL : 4

Responsibilities

The Assistant Operation Manager is responsible to communicate with the team member to prepare production plan to fulfil customer demand, preparing order for material and consumable needed for operation, ensure store operation adhere to Store management procedure, perform monthly stock count and implementation of FIFO

Knowledge:

- Material and consumable list and ordering procedure
- Generate production plan
- IBS wall panel production process flow
- Testing requirement and procedure
- Customer ordering pattern
- Supplier performance and capability
- Store management procedure
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision-making skills
- Strong communication with supplier and team members
- Leadership skills
- Reporting and presentation skills
- Analysis of supplier performance
- Negotiation skills

Attributes (Attitude/Safety/Environmental):

- Knowledgeable and professionalism in work
- Strong interpersonal skills
- Good communication with supplier and subordinates
- High level of commitment and strong team player
- Ability to work under pressure
- Meticulous in prepare order list

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (IBS WALL PANEL)

LEVEL : 4

Responsibilities

The Assistant Operation Manager is responsible to generate and execute production plan as customer demand, arrange manpower for operation, monitor production progress, ensure adherences to process parameter, confirm compliance to production parameter setting and ensure tool and equipment on good order for production

Knowledge:

- Production plan monitoring
- IBS wall panel production process
- Production parameter setting
- Inspection element and specification
- Machine and equipment usage for production
- Efficiency and downtime calculation
- Safe working environment
- Material and consumables usage
- English language including the spelling, rules of composition, and grammar

Skills:

- Good problem solving and decision-making skills
- Strong communication with down liner and superior
- Monitoring production progress.
- Leadership skills
- Reporting and presentation skill
- Analysis of production data and corrective action
- Measures production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Alert on production abnormalities
- Ability to work under pressure and independently
- Ability to adapt with workplace environment
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : QUALITY CONTROL (IBS WALL PANEL)

LEVEL : 4

Responsibilities

The Assistant Operation Manager is responsible to generate IBS wall panel inspection plan, confirm measuring and equipment tools selection for inspection, verify the product testing report, verify the Bonding agent formula and approve product for delivery to customer

Knowledge:

- Specification of IBS wall panel
- Building construction drawing
- Requirement and specification from customer
- Bonding agent and filler specification and characteristic
- IBS wall panel inspection item and specification
- QMS policy and procedure (ISO, OHSAS etc.)
- Instruction and working procedure
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision making
- Strong communication with team member and down liner
- Handle measuring and equipment tools
- Leadership skills
- Reporting and presentation skills
- Analysis of quality data
- Critical thinking – for alternative solution
- Measures system performance and improvement action.

Attributes (Attitude/Safety/Environmental):

- Detail in preparing inspection plan
- Meticulous in verifying quality report
- Sincere in approval quality data
- Knowledgeable and professionalism in work
- Strong interpersonal skills
- Firm in decision making
- High level of commitment and strong team player
- Ability to work under pressure

MSIC GROUP : 120

AREA : PRODUCTION ENGINEERING (IBS WALL PANEL)

LEVEL : 4

Responsibilities

The Engineering Assistant Manager is responsible to plan for machine and equipment maintenance, provide specification of IBS wall panel development, verify engineering drawing, arrange machine and equipment maintenance activity and lead team member for specification change for cost down activity.

Knowledge:

- Building construction drawing
- Machine maintenance requirements
- Engineering drawing template/ format
- Specification change and approval procedure
- Machine and equipment diagnostic and troubleshooting flow
- Management principles involved in strategic planning
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision making
- Strong communication with team member and down liner
- Leadership skills
- Interpret construction and engineering drawing
- Analyse machine and equipment break down pattern
- Handle machine and equipment repairing tools
- Reporting and presentation skills
- Analysis on machine breakdown data

Attributes (Attitude/Safety/Environmental):

- Detail in providing IBS specification
- Knowledgeable and professionalism in work
- Detail in checking and approving engineering drawing
- Strong interpersonal skills
- High level of commitment and strong team player
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : NEW DEVELOPMENT PRODUCT (IBS WALL PANEL)

LEVEL : 4

Responsibilities

The Engineering Assistant Manager is responsible to design and develop new IBS wall panel, produce sample, verify IBS wall panel fitting and matching trial report, approve new IBS wall panel product, release new specification, provide list of material for new product and seek approval from relevant authority body

Knowledge:

- Building construction drawing
- IBS wall panel approval procedure
- Tests procedures and results
- Fitting and matching trial procedure
- Bonding agent and filler characteristic
- New specification release procedure.
- Rule and regulation from statutory and regulatory body
- Company safety, rules & regulations
- English language including the spelling, rules of composition and grammar

Skills:

- Interpret IBS wall panel approval procedure
- Good communication with regulatory body and down liner
- Leadership skills
- Interpret construction and engineering drawing
- Interpret fitting and matching process
- Monitoring product development progress.
- Reporting and presentation skills

Attributes (Attitude/Safety/Environmental):

- Detail in providing IBS specification
- Detail in checking product development progress.
- Knowledgeable and professionalism in work
- Meticulous in checking and approving new specification
- Detail in checking fitting result report.
- Strong interpersonal skills
- High level of commitment and strong team player
- Ability to work under pressure

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (EXTRUSION & PULTRUSION)

LEVEL : 3

Responsibilities

The Production Supervisor (Extrusion) is responsible to verify Extrusion machine parameter, confirm the Bonding agent formula, arrange production run as SOP, verify the part handling procedure, monitor production progress, perform part inspection as specification and ensue PPE usage for production operator.

Knowledge:

- Machinery and equipment function and capacity
- Machine parameter setting
- Bonding agent and resin requirement and function
- Extrusion part inspection item
- Mould/die function and selection
- Instructions and working procedure
- Company safety, rules & regulations
- Workforce requirement for each section
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production.

Skills:

- Monitoring production performance
- Selection of tools and equipment for production
- Confirmation of Bonding agent and resin mixture
- Determine the machine parameter
- Usage of measuring tools and equipment
- Leadership and self-development skills
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Detail in checking production performance
- High level of commitment and strong team player
- Detail in checking inspection data
- Good communication with subordinates
- Ability to work under pressure
- Adhere to safety rule and regulations
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (EXTRUSION & PULTRUSION)

LEVEL : 3

Responsibilities

The Production Supervisor (Pultrusion) is responsible to verify Pultrusion machine parameter, confirm the Bonding agent formula, arrange production run as SOP, verify the part handling procedure, monitor production progress, perform part inspection as specification and review PPE usage for production operator.

Knowledge:

- Machinery and equipment function and capacity
- Machine parameter setting
- Pultrusion part inspection item
- Bonding agent and resin requirement and function
- Kenaf Roving and Kenaf mat handling procedure.
- Mould/die function and selection
- Instructions and working procedure
- Company safety, rules & regulations
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production operator

Skills:

- Monitoring production performance
- Selection tools and equipment for production
- Determine the machine parameter
- Usage of measuring tools and equipment
- Leadership and self-development skills
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Detail in checking production performance
- High level of commitment and strong team player
- Detail in checking inspection data
- Good communication with subordinates
- Ability to work under pressure
- Adhere to safety rule and regulations
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : QUALITY CONTROL (EXTRUSION & PULTRUSION)

LEVEL : 3

Responsibilities

The Quality Control Supervisor is responsible to oversees and monitors the inspection and testing of materials, parts and products as specification. Arrange inspection process, defines sampling procedures and determines tools and equipment to be used in the inspection and testing process. May suggest formulation and revise quality control policies and procedures based on quality data and analysis.

Knowledge:

- Extrusion and Pultrusion testing procedures
- Parts inspection elements
- Measuring and equipment tools usage
- Parts approval procedure
- Bonding agent and filler mixing formula
- Measuring and equipment calibration procedure
- QMS policy and procedure (ISO, OHSAS etc.)
- Company safety, rules & regulations

Skills:

- Usage of measuring and equipment tools
- Interpret Bonding agent formula
- Carry out product inspection and testing
- Judgment on part quality
- Supervisory skills
- Analysis of quality data

Attributes (Attitude/Safety/Environmental):

- Detail in performing part inspection
- Meticulous in evaluate parts data
- Good communication with subordinates
- Strong interpersonal skills
- Ability to work under pressure
- Adhere to safety rule and regulations
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION ENGINEERING (EXTRUSION & PULTRUSION)

LEVEL : 3

Responsibilities

The Binder / Standard Officer is responsible to design a material formulation for Extrusion and Pultrusion process, establishing a quality specification and procedure (SOP) for a formulation / product, prepare a list of materials needed for production purposes, resource new Binding agent and communicate with others department for specification updates.

Knowledge:

- Binding agent and resin characteristic
- Machine and equipment function and capability
- Extrusion and Pultrusion parameter setting
- Binding agent supplier
- New Binding formula release procedure
- Extrusion and Pultrusion part usage.
- Fiberglass reinforced plastic (FRP)
- English language including the spelling, rules of composition and grammar
- Parts testing requirement and procedure

Skills:

- Determine suitability of Binding agent
- Generate binding formulation
- Resource new Bonding agent
- Analysis on testing data or inspection result
- Report writing and presentation skills
- Leadership and self-development skills

Attributes (Attitude/Safety/Environmental):

- Detail in performing binding trial
- Meticulous in evaluate parts trial data
- Adhere to safety regulations, production quality standard
- Good communication with supplier
- Strong interpersonal skills
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (BIODEGRADABLE UTENSILS – BDU)

LEVEL : 3

Responsibilities

The Production Supervisor (Pulp) is responsible to verify Pulp machine parameter, verify content of chemical (Bilsuphite, filler, sizer) and soda usage, arrange production run as SOP, verify the part handling procedure, monitor production progress, perform part inspection as specification, handle contaminated (used) water and PPE usage for production operator.

Knowledge:

- Machinery and equipment function and capacity
- Chemical (Bilsuphite, filler, sizer) usage
- Pulp inspection and handling procedure
- Handling of contaminated (used) water
- Instructions and working procedure
- Company safety rules & regulations
- Workforce requirement for each section
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production operator

Skills:

- Monitoring production performance
- Selection of tools and equipment for production
- Determine the machine parameter
- Determine chemical mixture.
- Usage of measuring tools and equipment
- Handling of contaminated (used) water
- Leadership and self-development skills
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Detail in checking production performance
- High level of commitment and strong team player
- Meticulous in checking inspection data
- Good communication with subordinates
- Concern on handling contaminated (used) water
- Adhere to safety rule and regulations
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (BIODEGRADABLE UTENSILS – BDU)

LEVEL : 3

Responsibilities

The Production Supervisor (Utensils) is responsible to verify Utensil machine parameter, verify mould/ die condition, arrange production run as SOP, verify the part handling procedure, monitor production progress, perform part inspection as specification, verify part expiry date and PPE usage for production operator

Knowledge:

- Machinery and equipment function and capacity
- Utensil inspection item and handling procedure
- Use and function of Utensil expiry date
- Selection of mould/ die
- Demand from customer
- Instructions and working procedure
- Testing procedures and results
- Company safety, rules & regulations
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production operator

Skills:

- Monitoring production performance
- Selection of mould, tools and equipment for production
- Determine the machine parameter
- Usage of measuring tools and equipment
- Determine of Utensil expiry date
- Leadership and self-development skills
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Adhere to safety regulations, production quality standard
- Detail in checking production performance
- Meticulous in checking inspection data
- Responsible on select Utensil expiry date
- Good communication with subordinates
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : QUALITY CONTROL (BIODEGRADABLE UTENSILS – BDU)

LEVEL : 3

Responsibilities

The Quality Control Supervisor is responsible to oversees and monitors the inspection and testing of materials and products as specification. Verify inspection process, defines sampling procedures and determines measuring and equipment to be used in the testing process.

Knowledge:

- Utensil and Pulp testing procedures
- Parts inspection elements
- Measuring and equipment tools usage
- Parts approval procedure
- Measuring and equipment calibration procedure
- Usage and requirement of Utensil expiry date
- QMS policy and procedure (ISO,OHSAS etc.)
- Company safety, rules & regulations

Skills:

- Usage of measuring and equipment tools
- Interpret Utensil expiry date
- Carry out product inspection and testing
- Judgment on part quality
- Supervisory skills
- Analysis of quality data

Attributes (Attitude/Safety/Environmental):

- Detail in performing part inspection
- Meticulous in evaluate parts data
- Good communication with subordinates
- Strong interpersonal skills
- Ability to work under pressure
- Sincere in Utensil expiry date endorsement
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (BIODEGRADABLE UTENSILS – BDU)

LEVEL : 4

Responsibilities

The Production Executive is responsible to responsible to generate production plan as customer demand, verify manpower requirement for operation, monitor production progress, ensure adherences to process parameter and verify tool and equipment on good condition.

Knowledge:

- Production planning and monitoring
- Pulp and Utensil production process
- Chemical (Bilsuphite, filler, sizer) usage in process
- Production and machine parameter setting
- Inspection element and specification
- Machine and equipment usage for production
- Efficiency and downtime calculation
- Contaminated (used) water treatment
- Utensil expiry date requirement.
- Safe working environment
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision-making
- Strong communication with down liner and superior
- Monitoring production progress.
- Leadership skills
- Reporting and presentation skill
- Analysis of production data and do corrective action
- Measures production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Alert on production abnormalities
- Detail in measuring production performance
- Ability to work under pressure and independently
- Ability to adapt with workplace environment
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : QUALITY CONTROL (BIODEGRADABLE UTENSILS – BDU)

LEVEL : 4

Responsibilities

The Quality Control Executive is responsible to generate Pulp and Utensil inspection plan, confirm measuring and equipment tools selection for inspection, verify the product testing report, verify the Utensil expiry date and approve product for delivery to customer

Knowledge:

- Specification of Pulp and Utensil
- Contaminated (used) water treatment
- Chemical (Bilsuphite, filler, sizer) usage in process
- Requirement and specification from customer
- Pulp and Utensil inspection and testing item and specification
- Instruction and working procedure
- QMS policy and procedure (ISO, OHSAS etc.)
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision making
- Strong communication with team member and down liner
- Handle measuring and equipment tools
- Leadership skills
- Reporting and presentation skills
- Analysis of quality data
- Critical thinking – for alternative solution
- Measures system performance and improvement action.

Attributes (Attitude/Safety/Environmental):

- Detail in preparing inspection plan
- Meticulous in verifying quality report
- Sincere in approval quality data
- Knowledgeable and professionalism in work
- Strong interpersonal skills
- Firm in decision making
- High level of commitment and strong team player
- Ability to work under pressure and independently

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (ANIMAL FOOD PELLET)

LEVEL : 3

Responsibilities

The Production supervisor is responsible to verify Pelletizer machine parameter, arrange production run as SOP, verify the Pellet handling procedure, monitor production progress, perform pellet checking, verify pellet packaging and PPE usage for production operator

Knowledge:

- Pelletizer machine function and capacity
- Kenaf shoots selection
- Pellet ingredient and benefit
- Pellet inspection requirements
- Instructions and working procedure
- Company safety, rules & regulations
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production operator

Skills:

- Monitoring production performance
- Selection of Pellet ingredient
- Run Pelletizer machine operation
- Selection of packaging material
- Leadership and self-development skills
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Detail in checking production performance
- High level of commitment and strong team player
- Good communication with subordinates
- Ability to work under pressure
- Adhere to safety rule and regulations
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (ANIMAL FOOD PELLET)

LEVEL : 4

Responsibilities

The Production executive is responsible to generate production plan as customer demand, arrange manpower for operation, confirm Pellet ingredient, monitor production progress and ensure adherences to Pelletizer machine usage.

Knowledge:

- Production plan monitoring
- Pellet production process
- Pellet ingredient and advantages
- Inspection of Food Pellet
- Efficiency and downtime calculation
- Safe working environment
- Material and consumables usage
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision-making skills
- Strong communication with down liner and superior
- Monitoring production progress.
- Selection of Pellet ingredient
- Leadership skills
- Reporting and presentation skill
- Measures production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Alert on hygiene operation requirement
- Detail in measuring production performance
- Ability to work under pressure and independently
- Ability to adapt with workplace environment
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : QUALITY CONTROL (ANIMAL FOOD PELLET)

LEVEL : 4

Responsibilities

The Animal Food Nutritionist responsible is to generate Pellet formula, establish quality control procedure, evaluating animal growing progress, prepare ingredient list for Pellet production and overseeing Assistant nutritionist or other staff members.

Knowledge:

- Animal anatomy, physiology, diets, nutrition disorders etc.
- Nutritional values of various feeds
- Work of agricultural
- Animal food testing procedure
- Formulation for animal food
- Feed plans and nutritional programs for animals
- Chemical composition and nutritional value of grass, feed, forage, and other supplements

Skills:

- Derive of the scientific basis of nutrition
- Good problem solving and decision-making skills
- Selection of Pellet ingredient
- Leadership skills
- Reporting and presentation skill
- Animal food pellet research.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing Pellet formula
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Alert on hygiene requirement
- Detail in conduct Pellet food trial
- Ability to work under pressure and independently with boundless enthusiasm
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (FIBRE & CORE – MECHANICAL)

LEVEL : 3

Responsibilities

The Production supervisor is responsible to verify Decorticator machine parameter, arrange production run as SOP, verify the Fibre and core handling procedure, monitor production progress, perform product checking, verify product packaging and PPE usage for production operator

Knowledge:

- Decorticator machine function and capacity
- Fibre and core grading
- Fibre and core inspection requirements
- Safety machine operation
- Instructions and working procedure.
- Company safety, rules & regulations
- Workforce requirement for each section
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production operator

Skills:

- Monitoring production performance
- Selection and Fibre and core grading
- Run Decorticator machine operation
- Selection of packaging material
- Leadership and self-development skills.
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Detail in checking production performance
- Alert on production abnormality
- High level of commitment and strong team player
- Good communication with subordinates
- Ability to work under pressure
- Adhere to safety rule and regulations
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : QUALITY CONTROL (FIBRE & CORE – MECHANICAL)

LEVEL : 3

Responsibilities

The Quality Control Supervisor is responsible to oversees and monitors the inspection and testing of materials and products as specification. Verify inspection process, defines sampling procedures and determines method to be used in product inspection.

Knowledge:

- Fibre and Core inspection element procedures
- Foreign material type in Fibre and core product
- Grading and size specification for Fibre and core product
- Product packaging
- Parts approval procedure
- Company safety, rules & regulations

Skills:

- Usage of measuring and equipment
- Carry out product inspection
- Detect of foreign material
- Judgment and classification on part quality
- Supervisory skills
- Analysis of quality data

Attributes (Attitude/Safety/Environmental):

- Detail in performing part inspection
- Meticulous in evaluate parts
- Good communication with subordinates
- Strong interpersonal skills
- Ability to work under pressure
- Adhere to safety rule and regulations
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (FIBRE & CORE – MECHANICAL)

LEVEL : 4

Responsibilities

The Assistant Factory Manager is responsible to generate production plan as customer demand, arrange manpower for operation, confirm Decorticator machine parameter, monitor production progress and review adherence to Decorticator machine safety operation.

Knowledge:

- Production plan monitoring
- Kenaf receiving plan from RMCC
- Fibre and core production process
- Decorticator machine parameter and safety operation.
- Fibre and core inspection procedure
- Efficiency and downtime calculation
- Safe working environment
- English language including the spelling, rules of composition, and grammar

Skills:

- Good problem solving and decision-making skills
- Strong communication with down liner and superior
- Monitoring production progress.
- Selection and classification of Fibre and core
- Leadership skills
- Reporting and presentation skill
- Analysis of production data and do corrective action
- Measures production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Detail in measuring production performance
- Ability to work under pressure and independently
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : QUALITY CONTROL (FIBRE & CORE – MECHANICAL)

LEVEL : 4

Responsibilities

The Assistant Factory Manager is responsible to generate Fibre and Core inspection plan, confirm method for inspection, verify the product inspection report, verify product classification and approve product for delivery to customer

Knowledge:

- Specification and classification of Fibre and Core
- Requirement and specification from customer
- Benefit and advantages of Kenaf Fibre and Core
- Fibre and Core inspection item and specification.
- Instruction and working procedure
- English language including the spelling, rules of composition, and grammar

Skills:

- Good problem solving and decision making
- Strong communication with team member and down liner
- Judgement of Fibre and Core quality level and classification.
- Leadership skills
- Reporting and presentation skills
- Analysis of quality data
- Critical thinking – for alternative solution
- Measures system performance and improvement action.

Attributes (Attitude/Safety/Environmental):

- Detail in preparing inspection plan
- Detail in verifying quality report
- Sincere in approval quality data
- Knowledgeable and professionalism in work
- Strong interpersonal skills
- Firm in decision making
- High level of commitment and strong team player
- Ability to work under pressure and independently

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (FIBRE & CORE – BIO–RETTING)

LEVEL : 3

Responsibilities

The Production supervisor is responsible to verify equipment for Bio-Retting process, arrange production run as SOP, verify the Fibre and Ribbon handling procedure, monitor production progress, perform product checking, verify product packaging, handle contaminated (used) water and PPE usage for production operator

Knowledge:

- Bio-retting equipment and process
- Fibre and core grading
- Fibre and core inspection requirements
- Safety equipment usage
- Enzyme, chelating agent, pH level water requirement
- Contaminated (used) water and treatment procedure
- Instructions and working procedure.
- Company safety, rules & regulations
- Workforce requirement for each section
- Chemical substances handling procedure (as MSDS/SDS)
- PPE requirement for production operator

Skills:

- Monitoring production performance
- Selection and Fibre and core grading
- Treat contaminated (used) water
- Determine Enzyme, chelating agent mixture
- Selection of packaging material
- Leadership and self-development skills.
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Detail in checking production performance
- Concern on environmental issues
- Alert on production abnormality
- High level of commitment and strong team player
- Good communication with subordinates
- Adhere to safety rule and regulations
- Ability to work under pressure

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (FIBRE & CORE – BIO–RETTING)

LEVEL : 4

Responsibilities

The Assistant Operation Manager is responsible to generate production plan as customer demand, arrange manpower for operation, confirm selection of equipment for Bio-retting process, monitor production progress and ensure adherences to contaminated (used) water disposal procedure

Knowledge:

- Production plan monitoring
- Kenaf receiving plan from RMCC
- Fibre and core Bio-retting production process
- Fibre and core inspection procedure
- Enzyme, chelating agent, pH level water requirement
- Contaminated (used) water treatment process.
- Efficiency and downtime calculation
- Material and consumables usage
- English language including the spelling, rules of composition, and grammar

Skills:

- Good problem solving and decision-making skills
- Strong communication with down liner and superior
- Monitoring production progress.
- Handle disposal of contaminated (used) water
- Leadership skills
- Reporting and presentation skill
- Analysis of production data and do corrective action
- Measures production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Detail in measuring production performance
- Ability to work under pressure and independently
- Ability to adapt with workplace environment
- Adhere to safety rule and regulations

MSIC GROUP : 120

AREA : QUALITY CONTROL (KENAF SEED)

LEVEL : 3

Responsibilities

The Laboratory Assistant is responsible to oversees and monitors the inspection and testing of Kenaf seeds, verify inspection process data, defines sampling procedures, determines inspection and testing method and verify Kenaf seeds storage procedure.

Knowledge:

- Kenaf seeds inspection procedures
- Kenaf seeds inspection elements (humidity, authenticity, germination, *rawatan racun*)
- Foreign material type in Kenaf seeds
- Grading and size specification of Kenaf seeds
- Kenaf seeds storage handling and procedure (temperature and humidity)
  Parts approval procedure

Skills:

- Usage of laboratory apparatus
- Carry out product inspection (humidity, authenticity, germination, *rawatan racun*)
- Detect of foreign material
- Judgment and classification on Kenaf seeds
- Supervisory skills
- Analysis of quality data

Attributes (Attitude/Safety/Environmental):

- Detail in performing part inspection and testing
- Meticulous in evaluate Kenaf seeds
- Sincere on report the Kenaf seeds quality level.
- Adhere to safety regulations, production quality standard
- Good communication with subordinates
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (KENAF SEED)

LEVEL : 4

Responsibilities

The Assistant Factory Manager is responsible to generate production plan as customer demand, arrange manpower for operation, confirm Kenaf seed selection and classification process, monitor production progress and ensure adherences to Kenaf seeds storage procedure

Knowledge:

- Production plan monitoring
- Kenaf receiving plan from RMCC
- Kenaf seed selection and classification process.
- Kenaf seeds inspection (humidity, authenticity, germination, *rawatan racun*)
- Kenaf seed inspection procedure
- Kenaf seeds storage requirement and procedure (temperature and humidity)
- Efficiency and downtime calculation
- Material and consumables usage
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision-making skills
- Strong communication with down liner and superior
- Monitoring production progress.
- Selection and classification of Kenaf seeds
- Leadership skills
- Reporting and presentation skill
- Analysis of production data and do corrective action
- Measures production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Meticulous in selection and classification of Kenaf seeds
- Ability to work under pressure
- Ability to adapt with workplace environment

MSIC GROUP : 120

AREA : QUALITY CONTROL (KENAF SEED)

LEVEL : 4

Responsibilities

The Assistant Factory Manager is responsible to generate Kenaf seeds inspection plan, confirm method for inspection, verify the Kenaf seeds inspection report, verify product classification, verify Kenaf seeds storage procedure and approve product for delivery to customer

Knowledge:

- Specification and classification of Kenaf seeds
- Requirement and specification from customer
- Kenaf seeds inspection elements (humidity, authenticity, germination*, rawatan racun*)
- Kenaf seeds storage requirement and procedure
- Instruction and working procedure
- English language including the spelling, rules of composition, and grammar

Skills:

- Good problem solving and decision making
- Strong communication with team member and down liner
- Judgement on Kenaf seeds quality level and classification.
- Determine Kenaf seeds storage procedure (temperature and humidity)
- Leadership skills
- Reporting and presentation skills
- Critical thinking – for alternative solution
- Measures system performance and improvement action.

Attributes (Attitude/Safety/Environmental):

- Detail in preparing inspection plan
- Detail in verifying quality report
- Sincere in approval quality data
- Knowledgeable and professionalism in work
- Strong interpersonal skills
- Firm in decision making
- High level of commitment and strong team player
- Ability to work under pressure and independently

MSIC GROUP : 120

AREA : PRODUCTION OPERATION (ANIMAL BEDDING)

LEVEL : 3

Responsibilities

The Production supervisor is responsible to verify machine and equipment for Animal Bedding (Grinding) process, arrange production run as SOP, verify the Animal bedding handling procedure, monitor production progress, perform product checking, verify product label & packaging and PPE usage for production operator

Knowledge:

- Animal bedding grinding process
- Animal bedding grading
- Animal bedding inspection requirements
- Instructions and working procedure.
- Company safety, rules & regulations
- PPE requirement for production operator

Skills:

- Monitoring production performance
- Grading of Animal bedding
- Verify of foreign material in Animal bedding
- Labelling and packaging of Animal bedding
- Leadership and self-development skills.
- Supervisory skills.

Attributes (Attitude/Safety/Environmental):

- Adhere to safety regulations, production quality standard
- Detail in checking production performance
- High level of commitment and strong team player
- Good communication with subordinates
- Ability to work under pressure
- Ability to adapt with workplace environment.

MSIC GROUP : 10

AREA : PRODUCTION OPERATION (ANIMAL BEDDING)

LEVEL : 4

Responsibilities

The Assistant Operation Manager is responsible to generate production plan as customer demand, arrange manpower for operation, confirm Animal bedding selection and classification process, monitor production progress and verify Animal bedding labelling and packaging procedure.

Knowledge:

- Production plan monitoring
- Kenaf receiving plan from RMCC
- Animal bedding selection and classification process.
- Efficiency and downtime calculation
- Material and consumables usage
- English language including the spelling, rules of composition and grammar

Skills:

- Good problem solving and decision-making skills
- Strong communication with down liner and superior
- Monitoring production progress.
- Selection and classification of Animal bedding
- Leadership skills
- Reporting and presentation skill
- Analysis of production data and do corrective action
- Measures production performance and actions needed.

Attributes (Attitude/Safety/Environmental):

- Informative in preparing production plan
- Knowledgeable and professionalism in work
- Strong interpersonal skills with good attention to details
- Good communication with subordinates
- Meticulous in selection and classification of Animal bedding
- Ability to work under pressure
- Ability to adapt with workplace environment