



OCCUPATIONAL FRAMEWORK
MSIC 2008 CODE C 107 MANUFACTURE OF OTHER FOOD
PRODUCTS



JABATAN PEMBANGUNAN KEMAHIRAN
KEMENTERIAN SUMBER MANUSIA

Department of Skills Development
Ministry of Human Resources

First Printing 2018
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Ministry of Human Resources

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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 107 Manufacture of Food Products
ISBN 978-967-0572-94-9

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 via the OF will identify suitable Occupational areas which will either require development of skills training programmes or the review and enhancement of existing skills training programmes. 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 Manufacture of Other Food Products. 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 will explain the methodology used in the OF development such as qualitative analysis through brainstorming discussion sessions and industry surveys. Chapter 4 will discuss the findings of the focus groups and survey conducted that will be translated into the Occupational Structure, Occupational Description, Jobs in Demand, Skills in Demand and Emerging Skills. Ultimately, Chapter 5 will recommend 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. The OF for Manufacture of Other Food Products is based on the Malaysian Standards Industrial Classification 2008 (MSIC 2008) under Section C- Manufacturing, Division 10 – Manufacture of Food Products, Group 107 – Manufacture of Other Food Products. The total number of job area identified is 6 with 128 job titles. A total of 44 job titles identified as relevant to Industry 4.0. In order to develop the OF on the Manufacture of Other Food Products, all information related to the aforesaid group was gathered through literature review, survey and workshop sessions with industry experts.

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ABBREVIATIONS

BKMM	Food Safety & Quality Department
CBT	Competency Based Training
DSD	Department of Skills Development
FMM	Federation of Malaysian Manufactures
JD	Job Description
JPK	<i>Jabatan Pembangunan Kemahiran</i> (Department of Skills Development)
MOSQF	Malaysian Occupational Skills Qualification Framework
MSIC	Malaysian Standard Industrial Classification
MQA	Malaysian Qualification Agency
MQF	Malaysian Qualifications Framework
MSC	Malaysian Skills Certificate
NCS	National Competency Standards
NRC	National Research Council
NOSS	National Occupational Skills Standard
OF	Occupational Framework
OD	Occupational Description
OS	Occupational Structure
R&D	Research and Development

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 Other Food Products. The concept of the Occupational Framework and its function in skills training and curriculum development are also elaborated in this chapter.

1.1.1 Research Background

The Department of Skills Development (DSD) has previously conducted a research on Occupational Framework for various industry. However, there has not been a specific research on the Occupational Structure of the industry based on the Malaysian Standard Industry Classification's (MSIC) definition of the industry which is the Manufacture of Other Food Products. Manufacturing is defined in the MSIC Section C and Manufacture of Other Food Products in Division 10. In order to ensure the development of the Occupational Framework is in line with the development of the NOSS based on MSIC sections and divisions, this research aims to define the industry as specified in the MSIC regarding its Occupational Structure, Critical Jobs and Skills in Demand qualitatively.

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 providing 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 systems. The Act 652 also provides for the implementation of Malaysian Skills Certification System, making it coveted in leading to it

receiving award from no less than (5) levels of National skills qualification, Namely Malaysian Skills Certificate Level 1, 2 and 3; Malaysian Skills Diploma; and Malaysian 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, established the Malaysian Qualifications Agency along with its composition, functions and responsibilities. This act repealed the *Lembaga Akreditasi Negara Act 1996 [Act 556]* and dissolved *the Lembaga Akreditasi Negara*. The Malaysia Qualification Framework (MQF) refers to the policy framework that satisfies both the Nationally and internationally recognised 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 also provides progression routes for all the graduates in their 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 Malaysian Occupational Skills Qualification Framework (MOSQF).

MQF Level	Minimum Graduating Credit	Academic Sector	TVET Sector	Lifelong Learning/APEL Criteria for APEL(A)
8	No credit rating 80	PhD by Research Doctoral Degree by Mixed Mode & Coursework		Admission criteria: 35 years old Bachelor's degree in relevant field/equivalent 5 years' work experience Passed APEL assessment
7	No credit rating 40 30 20	Master's by Research Master's by Mixed Mode & Coursework Postgraduate Diploma Postgraduate Certificate		Admission criteria: 30 years old STPM/Diploma/equivalent Relevant work experience Passed APEL assessment
6	120 66 36	Bachelor's degree Graduate Diploma Graduate Certificate		Admission criteria: 21 years old Relevant work experience Passed APEL assessment
5	40	Advanced Diploma	5	
4	90	Diploma	4	Admission criteria: 20 years old Relevant work experience Passed APEL assessment
3	60	Certificate	3	Admission criteria: 19 years old Relevant work experience Passed APEL assessment
2	30	Certificate	2	3R
1	15	Certificate	1	3R

Figure 1.1: MQF and Lifelong Learning

(Source: MQF 2nd EDITION, 2017)

1.1.4 National Occupational Skills Standard (NOSS)

The National Occupational Skills Standard (NOSS) is a document that underlines and specifies 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 practitioners and skilled workers

based on Occupational needs and career structures which are utilised as the main tool in the implementation of Malaysian Skills Certification System in which the performance of existing industry workers and trainees are assessed based on the NOSS to be awarded the Malaysian Skills Certificate. NOSS can be used in both working and training world. In the training area, NOSS is used as a guideline in preparing learning equipment and materials development, as training needs analysis. It also could be used as assessment materials. Meanwhile, in the working environment, NOSS is used as a guide for recruitment, career development, and staff performance evaluation. Initially, there are two main components in NOSS document; (1) Standard Practice (SP), and (2) Standard Content (SC). The SP provides an Occupational overview of a particular profession, while the SC specifies the competencies needed for the occupation. The latest version of all NOSS has now included the training curriculum (known as Curriculum of Competency Unit (CoCu)) component, which provides guidelines for training purposes.

1.1.5 Competency Based Training (CBT)

Competency Based Training (CBT) is an approach to vocational training which emphasises on what a person can do in a workplace after completing the training programme. CBT is based on performance standards which are set by the industry with main focus on measuring the performance while taking knowledge and attitude into account rather than the duration taken to complete the course. CBT focuses on assisting learners to develop and demonstrate competent performance as required by the industry-approved competency standards. It aims to prepare the individual for employment or to become more productive in the workplace. Thus, training practices can be customised for each individual to achieve a similar outcome. The concept of CBT is based on the Malaysian 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 a basis to conduct skills training and skills certification of competent personnel.

1.1.7 Malaysian 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 the 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 and services nor it is a classification of occupations. (Department of Statistics, MSIC 2008).

1.2 Objectives of Study

The objectives of the study conducted on the Manufacture of Other Food Products are as below:

- To produce the OS for the Manufacture of Other Food Products 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 Manufacture of Other Food Products.

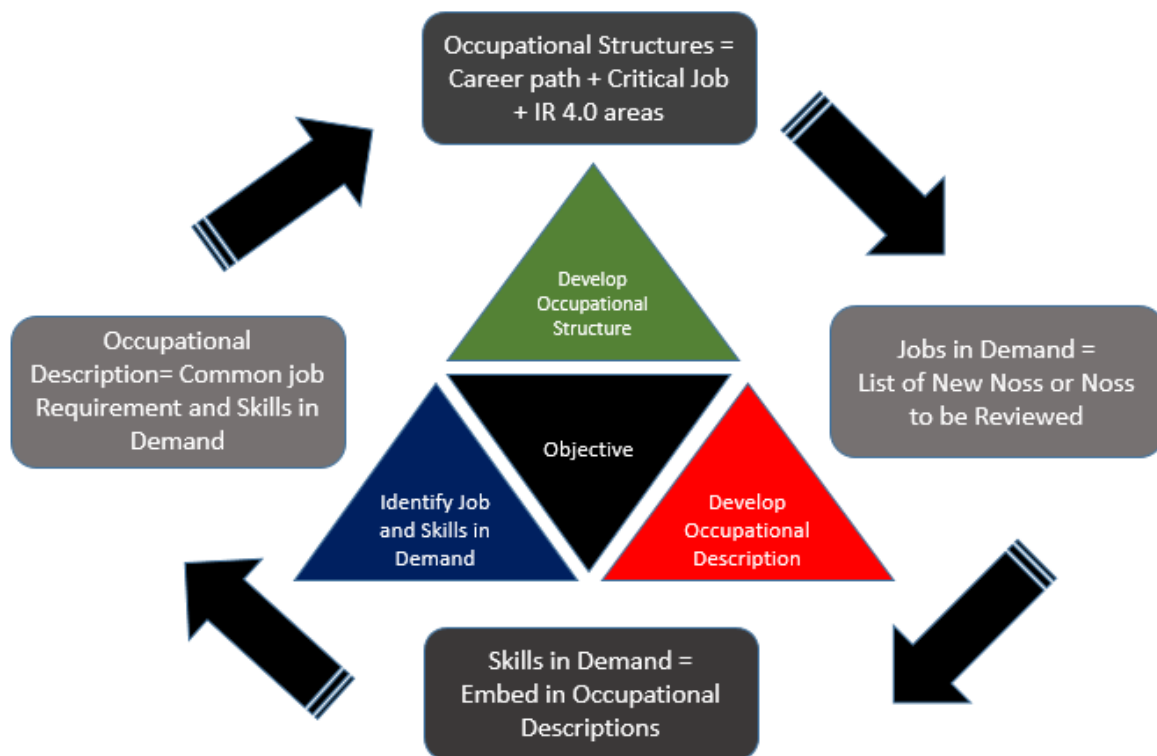


Figure 1.2: Objectives, Data Collection and Occupational Framework Outcomes

1.3 Scope of Study

The scope of work for the study conducted on the Manufacture of Other Food Products are as listed below:

- The scope of this research is only on the Manufacture of Other Food Products
- To conduct literature review on the Manufacture of Other Food Products;
- To consult with Manufacture of Other Food Products representatives in order to obtain expert input from industry;
- The expected outcome of the research will be the OS, OD, Jobs in demand and Skills in Demand;
- To develop, disseminate and analyse survey data via Manufacture of Other Food Products representatives; and
- To perform focus group discussions 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 10 for this particular Occupational Framework is as follows:

- The scope of the Manufacture of Other Food Products matches that of Division 10 under Section C: Manufacturing after analysing the scope of work and list of food products under the Groups of Division 10. (Please refer Table 1.1)
- Division 10 only focuses on the manufacturing aspect and job functions.
- The current NOSS registry (March 2018) has stated that the relevant to the industry are under Section C, Division 10.

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 below shows the mapping between sub-sectors of the industry and the Groups under Section C's Division 10.

Table 1.1: Mapping between MSIC Group and Industry Definition

MSIC GROUP	MSIC Group Description	MSIC Group Scope	Industry Definition
107	Manufacture of Other Food Products	This group includes the manufacture of bakery products such as biscuits, cookies, the manufacture of sugar, cocoa, chocolate, sugar confectionery and the manufacture of macaroni, noodles, couscous and similar farinaceous products.	Transforming livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) which are processed into food products. ¹

¹ Naics (2012, August 10th) Retrieved from <https://www.bls.gov/iag/tgs/iag311.htm>

1.5 Chapter Summary

This chapter sets 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) regarding its Occupational Structure, Jobs in Demand and Skills in Demand qualitatively

Emerging skills identified are such as Industry 4.0 related skills (i.e. automation and ability to utilise, maintain and optimise systems related to Industry 4.0) and innovation for continuous improvement (i.e. Kaizen skills). With the Occupational Structure 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 Manufacture of Other Food Products. 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 Other Food 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 subsequently confirmed by the development panel members.

2.2 Definition of Research Area

In order to ensure that the scope of the Manufacture of Other Food Products is comprehensively covered in this Occupational Framework research, the definition of Other Food Products has to be spelt out clearly. The definitions specified by the MSIC and industry definition by the Malaysian Investment Development Agency (MIDA) (2017) are as follows:

2.2.1 MSIC Definition of Manufacture of Other Food Products

Under MSIC, the area being researched falls under the Sections and Divisions listed below:

MSIC SECTION	C	MANUFACTURING
MSIC DIVISION	10	MANUFACTURE OF FOOD PRODUCTS
MSIC GROUP	107	Manufacture of other food products

Division 10 includes the processing of the products of agriculture, forestry and fishing into food for humans or animals, and includes the production of various intermediate products that are not directly food products. The activity often generates associated products of greater or lesser value (for example, hides from slaughter or oilcake from oil production). Group 107 includes the production of a variety of food products. This includes the production of bakery products, sugar and confectionery, macaroni noodles and similar products.

2.2.2 Industry Definition of Manufacture of Other Food Products

Based on the industry definition by the Malaysian Investment Development Authority, the food sub-sector in the food industry in Malaysia can be categorised as shown in Table 2.1. However, more specific definitions of the sub-sectors can be referred in Table 1.1 of this report.

Table 2.1 Industry Definition

Sector	Sub-sector	Products
Food	Bakery	Biscuits & cookies, bread, cakes & other bakery, snack and frozen bakery products
	Sugar	Sugar and sugar products
	Cocoa, Chocolate and sugar confectionary	Cocoa products, chocolate & chocolate products and sugar confectionary
	Macaroni, noodles, couscous and similar farinaceous	Meehoon, noodles & related products and pastas
	Prepared meals and dishes,	Prepared meals and dishes,
	Other food products n.e.c.	Coffee and tea

It must be highlighted that the Manufacture of Other Food Products Sector will be further researched in the Occupational Framework study on Division 10 of the MSIC Section C: Manufacturing. Other process will not be focused on in this research scope.

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 through Table 2.1 below can be referred.

Table 2.2: MSIC Section, Division and Group

MSIC SECTION	C	MANUFACTURING
MSIC DIVISION	10	MANUFACTURE OF FOOD PRODUCTS
MSIC GROUP	107	Manufacture of other food products

Table 2.3: MSIC Group 107 (Class 1071, Item 10711-10714)

Section	C	MANUFACTURING
Division	10	MANUFACTURE OF FOOD PRODUCT
Group	107	Manufacture of other food products
Class	1071	Manufacture of bakery products⁽¹⁾
Item	10711	Manufacture of biscuits and cookies ⁽²⁾
	10712	Manufacture of bread, cakes and other bakery products ⁽³⁾
	10713	Manufacture of snack products ⁽⁴⁾
	10714	Manufacture of frozen bakery products ⁽⁵⁾

(1) Excludes:

(a) manufacture of farinaceous products (pastas), see 10742

(b) heating up of bakery items for immediate consumption, see division 56

(2) Includes:

(a) manufacture of rusks

(3) Includes:

(a) manufacture of bread and rolls

(b) manufacture of fresh pastry, pies, tarts, production of egg-based dessert (e.g. egg custard), etc.

(c) manufacture of preserved pastry goods, etc.

(d) manufacture of dry and other bakery products n.e.c.

(4) Includes:

crackers, pretzels, potato snacks, potato crisps, etc., whether sweet or salted

(5) Includes:

pancakes, waffles, rolls, *roti canai*, *murtabak*, etc.

Table 2.4: MSIC Group 107 (Class 1072, Item 10721-10722)

Section	C	MANUFACTURING
Division	10	MANUFACTURE OF FOOD PRODUCT
Group	107	Manufacture of other food product
Class	1072	Manufacture of sugar ⁽¹⁾
Item	10721	Manufacture of biscuits and cookies
	10722	Manufacture of bread, cakes and other bakery products ⁽²⁾
(1) Includes: (a) manufacture of refining of sugar (sucrose) and sugar substitutes from juice of cane, beet, maple and palm (b) manufacture of sugar syrups (c) manufacture of molasses Excludes: manufacture of glucose, glucose syrup, maltose, inulin, see 10622		
(2) Includes: <i>gula melaka</i>, <i>gula enau</i>, etc.		

Table 2.5: MSIC Group 107 (Class 1073, Item 10731-10733)

Section	C	MANUFACTURING
Division	10	MANUFACTURE OF FOOD PRODUCT
Group	107	Manufacture of other food product
Class	1073	Manufacture of cocoa, chocolate and sugar confectionery ⁽¹⁾
Item	10731	Manufacture of cocoa products ⁽²⁾
	10732	Manufacture of chocolate and chocolate products ⁽³⁾
	10733	Manufacture of sugar confectionery ⁽⁴⁾
(1) Excludes: manufacture of sucrose sugar, see 1072 (2) Includes: manufacture of cocoa mass, cocoa butter/oil/fat, cocoa cake, cocoa powder (3) Includes: (a) manufacture of chocolate and chocolate confectionery (b) manufacture of semi-process cocoa product such as chocolate lock, chocolate chip, chocolate nugget, chocolate rice (4) Includes: (a) manufacture of caramels, nougats, white chocolate, etc. (b) manufacture of chewing gum (c) manufacture of confectionery lozenges and pastilles		

Table 2.6: MSIC Group 107 (Class 1074, Item 10741-10742)

Section	C	MANUFACTURING
Division	10	MANUFACTURE OF FOOD PRODUCT
Group	107	Manufacture of other food product
Class	1074	Manufacture of macaroni, noodles, couscous and similar farinaceous products ⁽¹⁾
Item	10741	Manufacture of <i>meehoon</i> , noodles and other related products ⁽²⁾
	10742	Manufacture of pastas ⁽³⁾
(1) Includes: (a) manufacture of canned or frozen pasta products (b) manufacture of couscous Excludes: (a) manufacture of soup containing pasta, see 10799 (b) manufacture of prepared couscous dishes, see 1075 (2) Includes: manufacture of instant noodles, <i>cendol</i>, <i>kuay teow</i>, vermicelli, transparent vermicelli (laksa), glass noodles (3) Includes: manufacture of spaghetti, macaroni, couscous and similar farinaceous products		

Table 2.7: MSIC Group 107 (Class 1075, Item 10750)

Section	C	MANUFACTURING
Division	10	MANUFACTURE OF FOOD PRODUCT
Group	107	Manufacture of other food product
Class	1075	Manufacture of prepared meals and dishes ⁽¹⁾
Item	10750	Manufacture of prepared meals and dishes
(1) Includes: (a) manufacture of meat or poultry dishes (b) manufacture of canned stews and vacuum-prepared meals (c) manufacture of other prepared meals (e.g. TV dinners, etc.) (d) manufacture of prepared frozen fish dishes, including fish and chips (e) manufacture of prepared dishes of vegetables (f) manufacture of frozen or otherwise preserved pizza (g) manufacture of prepared couscous dishes (h) manufacturing of perishable prepared foods [e.g. sandwiches, fresh (uncooked) pizza] Excludes: (a) manufacture of fresh food or foods with only main ingredient, see division 10 (b) wholesale of prepared meals and dishes, see group 463 (c) retail sale of prepared meals and dishes in stores, see 4711 and 4721 (d) activities of food service contractors, see 5629		

Table 2.8: MSIC Group 107 (Class 1079, Item 10791-10792)

Section	C	MANUFACTURING
Division	10	MANUFACTURE OF FOOD PRODUCT
Group	107	Manufacture of other food product
Class	1079	Manufacture of other food products n.e.c ⁽¹⁾
Item	10791	Manufacture of coffee ⁽²⁾
	10792	Manufacture of tea ⁽³⁾
	10793	Manufacture of sauces and condiments ⁽⁴⁾
	10794	Manufacture of spices and curry powder ⁽⁵⁾
	10795	Manufacture of egg products ⁽⁶⁾
	10799	Manufacture of other food products n.e.c ⁽⁷⁾

(1) Excludes:

- (a) growing of spice crops, see 0128
- (b) manufacture of inulin, see 10622
- (c) manufacture of perishable prepared foods of fruit and vegetables (e.g. salads, peeled vegetables, bean curd), see 1030
- (d) manufacture of frozen pizza, see 1075
- (e) manufacture of spirits, beer, wine and soft drinks, see division 11
- (f) manufacture of botanical products for pharmaceutical use, see 2100

(2) Includes:

- (a) decaffeinating and roasting of coffee
- (b) production of coffee products (e.g. ground coffee, soluble coffee, extract and concentrates of coffee)
- (c) manufacture of coffee substitutes

(3) Includes:

- (a) blending of tea and mate
- (b) extracts and preparations based on tea or mate

(4) Includes:

- (a) mayonnaise, mustard flour and meal, prepared mustard, flavouring extracts

- (b) manufacture of sauces including flavouring extracts such as monosodium glutamate**
- (c) manufacture of other sauces and condiments, n.e.c.**
- (5) Includes:**
 - (a) white and black pepper powder**
 - (b) manufacture of herb infusions (e.g. mint, vervain, chamomile, etc.)**
 - (c) manufacture of other spices n.e.c.**
- (6) Includes:**
 - (a) manufacture of liquid egg products**
 - (b) manufacture of frozen egg products**
 - (c) manufacture of dried, heat coagulated egg products**
 - (d) production of salted-cured egg**
 - (e) production of alkaline treated eggs**
 - (f) production of canned egg**
 - (g) manufacture of egg albumin**
- (7) Includes:**
 - (a) manufacture of vinegar**
 - (b) manufacture of artificial honey and caramel**
 - (c) manufacture of yeast**
 - (d) manufacture of extracts and juices of meat, fish, crustaceans or molluscs**
 - (e) manufacture of non-dairy milk (soya) and cheese substitutes**
 - (f) manufacture of baby foods**
 - (g) manufacture of soups and broths, canned or packets**
 - (h) processing of salt into food-grade salt (e.g. iodized salt)**
 - (i) manufacture of artificial concentrates**
 - (j) foods containing homogenized ingredients**

2.4 Key Stakeholders

The stakeholders of the Manufacture of Other Food Products in Malaysia comprise of government agencies, regulatory bodies, industry association professional bodies of Manufacture of Other Food Products.

2.4.1 Regulatory Bodies and Relevant Government Agencies

The regulatory bodies and relevant government agencies for the Manufacture of Other Food Products industry can be referred in Table 2.9 below:

Table 2.9: List of Government Agencies/Regulatory Agencies/Licensing Bodies

No	Government Agency/Regulatory Agency/Licensing Body	Relevance to Manufacture of Other Food Products Industry
1.	Ministry of Primary Industry (MPI) (Website: https://www.mpic.gov.my)	MPI act as government agency which responsible to make Malaysia the centre of excellence for the commodity sector and as a major producer of higher value-added commodity-based products in the global markets. ² MPI need to formulate policies and strategies for the overall development of the plantation and the commodity sectors.
2.	Institute of Malaysian Plantation and Commodities (IMPAC) (Website: https://www.impac.edu.my)	IMPAC is formal training institution established under MPIC to merge and coordinate all courses and training carried out by the different agencies under one organization. Agencies involved are Malaysian Palm Oil Board (MPOB), Malaysian Rubber Board

² Ministry of Plantation Industries and Commodities (MPIC) (2018, August 12). Retrieved from <https://www.mpic.gov.my>

No	Government Agency/Regulatory Agency/Licensing Body	Relevance to Manufacture of Other Food Products Industry
		(MRB), Malaysian Timber Industry Board (MTIB), Malaysian Cocoa Board (MCB), Malaysian Pepper Board (MPB) and National Kenaf and Tobacco Board (NKTB). ³
3.	Malaysian Investment Development Authority (MIDA) (Website: http://www.mida.gov.my)	The Malaysian Investment Development Authority (MIDA) is the government's principal agency for the promotion of the manufacturing and services sectors in Malaysia. In terms of the Food Products manufacturing industry, MIDA's role is to undertake planning for industrial development in Malaysia, to recommend policies and strategies on industrial promotion and development to the Ministry of International Trade and Industry, to evaluate application for manufacturing licenses, and expatriate posts; tax incentives for manufacturing activities, and duty exemption on raw materials, components and machinery. 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. ⁴
5.	Food Safety & Quality Department (Website: jkn.selangor.moh.gov.my)	BKKM is established to strengthen the planning, implementation, monitoring

³ Institute of Malaysian Plantation and Commodities (IMPAC). (2018, August 10). Retrieved from https://www.impac.edu.my/about_us/about_impac/objectives

⁴ Malaysian Investment Development Authority (MIDA) (2018, May 12th). *Incentives in Manufacturing*. Retrieved from <http://www.mida.gov.my/home/incentives-in-manufacturing-sector/posts/>

No	Government Agency/Regulatory Agency/Licensing Body	Relevance to Manufacture of Other Food Products Industry
		and evaluation of Food Security and Quality Programs to protect the public against health hazards and fraud on storage, preparation, packaging processing, transportation, sale and consumption of food; as well as facilitating food trade.⁵ This unit is responsible for ensuring implementation of all policies, policies and strategies, the Ministry of Health in relation to the export control of food
6.	Ministry of Agriculture and Agro-based Industry (MOA) (Website: http://www.moa.gov.my)	MOA is a ministry of the Government of Malaysia that is responsible for agriculture, agro-based industries, agritourism, livestock, veterinary services, fisheries, quarantines, inspections, agricultural researches, agricultural development, agricultural marketing, pineapple industry, agribusiness, botanical garden, food security, food sovereignty.⁶ The objective of the projects implemented by MOA Inc. is to improve the effectiveness of the delivery system in achieving the agricultural sector transformation's target of the agricultural sector's transformation and

⁵ Food Safety & Quality Department (BKMM) (2016, September 14th). *Food Safety and Quality Department*. Retrieved from <http://jknselangor.moh.gov.my>

⁶ Ministry of Agriculture and Agro-based Industry (MOA) (2017). Retrieved from <http://www.moa.gov.my>

No	Government Agency/Regulatory Agency/Licensing Body	Relevance to Manufacture of Other Food Products Industry
		enhance the Government's role in facing agricultural sector issues, challenges and requirements viable in contributing to the National economic growth incessantly. The implementation of agricultural development projects requires an efficient and effective service support. Skilled human-resources preparation, adequate financial resources, infrastructure and state-of-the-art technology from the early stage of input preparation, production, handling products and agricultural-products marketing including food which are very important for the success and development of this sector.
7.	Department of Islamic Development Malaysia (JAKIM) (Website: http://www.halal.gov.my)	JAKIM is the agency responsible for the Islamic affairs including halal certification in Malaysia. Therefore, JAKIM plays very important role to protect Muslim consumers in Malaysia and it is always been JAKIM's responsibility to assure them to seek for halal products as urged by Shariah.⁷ For the purpose of halal certification, JAKIM has to ascertain the halal status of the product at every stage and at

⁷ Department of Islamic Development Malaysia (JAKIM) (2018) Retrieved from <http://www.halal.gov.my>

No	Government Agency/Regulatory Agency/Licensing Body	Relevance to Manufacture of Other Food Products Industry
		every process involved by carrying out an official site inspection on the plants purposely to examine on how the halal status of the raw material is maintained and monitored at all times.
8.	Malaysian Agricultural Research and Development Institute (MARDI) (Website: http://www.mardi.gov.my)	MARDI is a government body in Malaysia under the Ministry of Agriculture and Agro-based Industry (MOA). MARDI responsible to conduct researches in the fields of science, technical, economy, and social with regards production, utilization and processing of all crops (except rubber, oil palm and cocoa), livestock and food and Integrated farming.⁸
9.	Federal Agricultural Marketing Authority (FAMA) (Website: http://www.fama.gov.my)	FAMA is a statutory body under the Ministry of Agriculture and Agro Based Industry. FAMA's responsibility is to improve the marketing of agro food products such as vegetables, fruits and agro-based industry products.⁹ In the domestic and International marketing sector, FAMA in its role of marketing agro food products initiates to expand the market size of agro food products and increase agriculture and agro-based industry products to ensure

⁸ Malaysian Agricultural Research and Development Institute (MARDI) (2017, November 23). Retrieved from <https://www.mardi.gov.my/index.php/pages/view/749?mid=313>

⁹ Federal Agricultural Marketing Authority (FAMA) (2018) Retrieved from <http://www.fama.gov.my>

No	Government Agency/Regulatory Agency/Licensing Body	Relevance to Manufacture of Other Food Products Industry
		it is available and can be obtained at affordable prices by consumers.
10.	Malaysia Cocoa Board (MCB) (Website: http://www.koko.gov.my)	The Malaysian Cocoa Board (MCB) is a federal statutory agency under the Ministry of Plantation Industries and Commodities (previously called Ministry of Primary Industries Malaysia until 2004). It was established under the Act of Parliament 343 (incorporated) in 1988 and has been in operation since 1989. The main objective is to develop the cocoa industry in Malaysia to be well integrated and competitive in the global market. Emphasis is given to increasing productivity and efficiency in cocoa bean production and increasing downstream activities. ¹⁰ The objective of market development is to increase the market share of Malaysian cocoa beans and cocoa products in the International and domestic market. The activities include International and domestic promotion. International promotion is carried out through trade and technical missions, and International expositions. Domestic promotion is undertaken through cocoa fairs, digital media (TV programmes, websites) and exhibitions. Goodness of cocoa is the main theme for promotion.

¹⁰ Malaysia Cocoa Board (MCB) (2018, September 21) Retrieved from <http://www.koko.gov.my/lkm/loader.cfm?page=aboutus/introduction.cfm>

2.4.2 Professional Bodies and Industry Associations

The following Table 2.10 and list of industry associations serve their respective categories of organisations by promoting their interests and facilitate close collaboration between their members in organisations towards the strengthening of the industry.

Table 2.10: List of Industry Associations

No	Industry Association	Relevance to Food Products Manufacturing Industry
1	Malaysia Institute Food Technology (MIFT) (Website: http://www.mift.org)	MIFT is a non-profit professional body of food technologists and educators in the field of food science and technology, and other individuals involved in areas of work closely related to food technology. MIFT is responsible in stimulating scientific and technological researches in various aspects of Food Technology; to provide a medium for exchange, discussion, publication, and dissemination on various aspects of Food Technology; and to promote the profession of Food Technology by raising educational standards, promoting the scientific approach to food, and increasing public awareness of the basic role of Food Technologists in the industry.¹¹
2.	Federation of Malaysian Manufacturers (FMM) (Website: http://www.fmm.org.my)	FMM Institute, a subsidiary company of the Federation of Malaysian Manufacturers, was established to provide industry-relevant skills training for the manufacturing and services sectors for the continuing development of the human capital.¹²

¹¹ Malaysia Institute Food Technology (MIFT) (2017) Retrived from <http://www.mift.org.my/article.php?no=1>

¹² Federation of Malaysian Manufacturers (FMM) (2016) Retrieved from <http://www.fmm.edu.my>

No	Industry Association	Relevance to Food Products Manufacturing Industry
		In terms of food industry, it is responsible in promoting the interests of Malaysian food processing industries in the ASEAN region, through active participation in the activities of the ASEAN-CCI and the ASEAN Federation of Food Processing Industries; to promoting the development of the food processing industries in Malaysia by formulating recommendations on investment incentives, market protection and other measures in order to be a cohesive group promoting cooperation among the food processing industries in Malaysia.
3.	Halal Industry Development Corporation (HDC) (Website: http://www.hdcglobal.com)	HDC coordinates the overall development of the Halal industry in Malaysia. Focusing on the development of Halal standards, audit and certification, plus capacity building for Halal products and services, HDC promotes participation and facilitates growth of Malaysian companies in the global Halal market¹³.HDC is Malaysia's response to the momentum currently building up worldwide, for better quality products and services with consumers gaining confidence in the Halal process. It will provide manufacturers, distributors, retailers, entrepreneurs, researchers and investors all the necessary assistance to penetrate the global Halal market through the adoption of the Malaysian experience and expertise in food

¹³ Halal Industry Development Corporation (HDC) (2018) Retrieved from <http://www.hdcglobal.com>

No	Industry Association	Relevance to Food Products Manufacturing Industry
		and non-food sectors.
4.	MSM Malaysia Holding Berhad (Website: http://www.msmsugar.com)	MSM is Malaysia's leading refined sugar producer. It's operates the sugar business of FGV Holdings Berhad and produces, markets and sells refined sugar products. MSM target is to excel as a highly competitive & environment friendly sugar producer with exceptional quality recognition. To be a prominent corporation in the sugar business by providing products & services of superior value so as to sustain consistent long-term growth in volume and profitability.¹⁴
5.	Nestlé (Malaysia) Berhad (Website: https://www.nestle.com)	Nestlé's purpose is enhancing quality of life and contributing to a healthier future. We want to help shape a better and healthier world. We also want to inspire people to live healthier lives. This is how we contribute to society while ensuring the long-term success of our company.¹⁵

2.4.3 Training Centre

The following Table 2.11 indicates the training centres to the overall manufacturing industry which includes the manufacturing of other food products

¹⁴ MSM Malaysia Holding Berhad (2018), Retrieved from <http://www.msmsugar.com/our-company/msm-group/vision-mission>

¹⁵ Nestlé (2018), Retrieved from <https://www.nestle.com.my/aboutus>

Table 2.11: List of Training Centre

No	Industry Association	Relevance to Food Products Manufacturing Industry
1	ASIA FOOD (Asia Food Validation Centre) (Website: https://www.unikl.edu.my)	ASIA FOOD is a manufacturing, processing and validation centre developed by MARA in collaboration with Ministry of Health to provide food entrepreneurs with comprehensive training, support and consultation services in food technology and manufacturing. It is estimated that Small Medium Enterprises (SMEs) contribute to almost 99.2% of business establishments in Malaysia and the food processing sector accounts for the largest sector among SMEs. With Malaysia emerging as one of the major players in the Halal industry globally, the growth opportunity for food manufacturers in Malaysia is immense.¹⁶
2	GlobalL Institute of Studies (Website: http://www.skillsmalaysiainvite.gov.my)	Global Institute of Studies plan to create and provide a new dimension of learning skills to international school leavers and adult learners who are not option-out from the purely academic stream and preparing them for skills-based qualification in job entry employment and entrepreneurship. In mainstreaming international skills

¹⁶ ASIA FOOD (2018) Retrieved from <https://www.unikl.edu.my/about-us/centres/asia-food/>

No	Industry Association	Relevance to Food Products Manufacturing Industry
		training Global Institute of Studies had prepare to build highly-skilled professional by re-branding and reformation the TVET image within the regulatory body NASDA 2006 (Act 652). ¹⁷
3	Cocoa Innovative and Technology Centre (Website: http://www.koko.gov.my)	MCB offers technical and advisory services to the cocoa planting and downstream industry. Cocoa Innovative and Technology Centre, Nilai is equipped with laboratory to provide services on physical, chemical and microbiological analyses of cocoa beans and cocoa products. It is also equipped with a pilot plant to provide product development trials services for the industry. ¹⁸

2.5 Government Legislation, Policy and Initiatives

2.5.1 Legislations

The following Table 2.12 indicates the relevant legislations to the overall manufacturing industry which includes the manufacturing of other food products.

¹⁷ Global Institute of studies (2018) Retrieved from <http://www.skillsmalaysiainvite.gov.my/iac/global-institute-of-studies/>

¹⁸ Malaysian Cocoa Board (MCB) (2018, October 16) Retrieved from <http://www.koko.gov.my/lkm/loader.cfm?page=aboutus/introduction.cfm>

Table 2.12: List of Relevant legislations

No	Areas acts are related to	Name of Act	Function and relevance of act
1.	Acts related to safety management	Occupational Safety and Health Act 1994 (Act 514) (Website: http://www.dosh.gov.my)	The purposes of this Act are to secure the safety, health and welfare of persons at work, to protect others against risks of safety or health in connection with the activities of persons at work. The regulatory body for this Act is the Department of Occupational Safety and Health (DOSH). ¹⁹
		Environmental Quality Act 1974 (Act 127) (Website: https://www.ecolex.org)	An Act related to the prevention, abatement, control of pollution and the enhancement of the environment, and for purposes connected therewith. ²⁰
		Factories and Machinery Act 1967 [Act 319] / Factories and Machinery Act (Amendment) 2006 (Website: http://www.dosh.gov.my)	An Act to provide for the control of factories with respect to matters relating safety, health and welfare of person therein, the registration and inspection of machinery and for matters connected therewith. ²¹

¹⁹ DOSH (2016) *Occupational Safety and Health Act* Retrieved from <http://www.dosh.gov.my/index.php/en/legislation/regulations-1>

²⁰ ECOLEX (2001) Retrieved from <https://www.ecolex.org/details/legislation/environmental-quality-act-1974-no-127-of-1974-lex-faoc013278>

²¹ DOSH (2016) *Factories and Machinery (Amendment)*, Retrieved from <http://www.dosh.gov.my/index.php/en/legislation>

No	Areas acts are related to	Name of Act	Function and relevance of act
2.	Acts related to food management	Food Act 1983 and Food Regulations 1985 (Website: http://www.hdcglobal.com)	The Food Act 1983 and Food Regulations 1985 is fully utilized by the Ministry of Health under the Food Safety and Quality Division to ensure and uphold the Nation's integrity in food safety and quality. The division will ensure all imported and locally manufactured foods are safe and in compliance with the Food Act 1983 and Food Regulations 1985.²² Food consignments exported by the country are following regulations imposed by the importing countries. Participation in planning, monitoring and evaluating all activities with regards to the WTO (SPS & TBT agreements) trade agreements and Regional Affairs.
		Trade Descriptions Act 2011 (Website: http://www.hdcglobal.com)	The Act offers protection to traders/consumers from unethical trade practices. The use of 'Halal' expression is construed as a trade description for purposes of this Act.

²² Halal Industry Development Corporation (HDC) (2018). *Policies and Regulations*, Retrieved from http://www.hdcglobal.com/publisher/gwm_pol_and_reg

No	Areas acts are related to	Name of Act	Function and relevance of act
			The use of the “Halal” description or any other such descriptions is voluntary under the current legislations. However, the Trade Descriptions (Definition of Halal) Order 2011 provides that when food or goods are described as halal or are described in any other expression to indicate that the food or goods can be consumed or used by a Muslim.²³
3	Acts related to consumer	Consumer Protection Act 1987 (Website: http://allergytraining.food.gov.uk)	Under the Consumer Protection Act 1987 (CPA), a manufacturer can be held liable to consumers for injury, loss or damage suffered as a result of them supplying a defective product, whether or not they are negligent. In practice, it will become more difficult for a manufacturer which does not provide relevant advice to establish that their product is not defective under the Consumer Protection Act 1987, or that they are not negligent in the labelling their product where a significant number of other suppliers are providing advice on the potential

²³ Halal Industry Development Corporation (HDC) (2018). *Policies and Regulations*, Retrieved from http://www.hdcglobal.com/publisher/gwm_pol_and_reg

No	Areas acts are related to	Name of Act	Function and relevance of act
			presence of allergens in their products. ²⁴

²⁴ FSA (2018) *Food Standards Agency*. Retrieved from <http://allergytraining.food.gov.uk/english/rules-and-legislation/>

2.5.2 Government Policies and Initiatives

The current economic plans (IMP3 and RMK11) are still relevant and remain as Malaysia's mid-term policy guide until 2020. RMK11(2016-2020) has identified the manufacture of other food products sectors as one of vital part for the manufacturing sector. These sectors will continue as the focus sector together with other sectors such as automotive, petrochemicals, textiles and services.

For Malaysia to remain a competitive investment destination in the region and to attract a new breed of quality investments, competitive incentive offerings will continue to be used as a strategic planning tool to achieve the National investment agenda. These incentives, especially for high impact and strategic businesses, are aimed to encourage and support industries to move up the value chain. As the number of high-quality investments rise and new growth areas spring up, so too will the demand for highly skilled workers, thereby raising the Nation's income levels.

Malaysia has a wide variety of incentives covering the major industry sectors. Tax incentives can be granted through income exemption or by way of allowances. The major tax incentives for companies investing in the manufacturing sector are the Pioneer Status and the Investment Tax Allowance. Eligibility for Pioneer Status and Investment Tax Allowance is based on certain priorities, including the level of value-added, technology used and industrial linkages.²⁵

There are various types of incentives available in Malaysia for areas of Research & Development (R&D), Automation and Green Technology. These incentives are important to further encourage these activities to be conducted by industry players. For companies that provide or conduct R & D in manufacturing they will be eligible for tax exemption and Investment Tax Allowance (ITA). There are also incentives for manufacturing companies with increased use of automation where they have incurred expenditure in automation equipment used directly in the

²⁵ MIDA. (2017). *MIDA Malaysia Investment Performance Report 2017*. Page 33-34.

manufacturing activities and resulting in reduced man hours and increased productivity.

Manufacturing companies that have been in operation for at least 36 months are eligible for automation capital allowance. For companies that purchase green technology assets listed on the 'MyHijau' directory, they will be eligible for an ITA.²⁶

Government also implemented National Commodity Policy (NCP) for helping agriculture sector in empowering commodity industries. National Commodity Policy (NCP) 2011-2020 was launched on 17 February 2012. The NCP provides strategic direction for the development of the plantation and commodities industry until 2020. There are 7 thrusts to further transform the commodity sector that is:

Thrust 1:

Strengthening Commodities Industries in National Economic Development

To empower the development of the commodity industry, priority will be given to development of new improved products and market oriented. This step will be implemented through the production of new innovative products by local R & D institutions. In addition, strategic cooperation between local and overseas R & D institutions as well will be improved.

Thrust 2:

Elevating Modernisation of the Commodity Industry

The use of modern technology, mechanization and automation will be expanded to improve commodity industry productivity. Focus is given to promote the use of technology for save cost, reduce dependency towards labor and improve quality along the value chain of the commodity industry.

²⁶ PWC. (2018, April 23rd). *Tax Summaries*. Retrieved from <http://taxsummaries.pwc.com/ID/Malaysia-Corporate-Tax-credits-and-incentives> on

Thrust 3:

Diversifying Production of High Value-added Products

Efforts will be intensified to diversify high value-added downstream product production to meet market needs.

This is supported by local and International R & D collaboration networks for strengthening donations towards existing commodity industry.

Thrust 4:

Generating New Sources of Revenue

The implementation of the concept of waste to wealth will be developed and promoted. Through R & D activities, waste of palm oil, rubber, cocoa and sago potentially developed to produce new products are environmentally friendly and sustainable. Besides being able to generate new sources of income, the use of waste of commodity industry as well can optimize the use of resources and helping to conserve the environment.

Thrust 5:

Enhancing Competitiveness and Market Expansion

Industrial competitiveness is strengthened through branding quality commodity-based products, sustainable and environmentally friendly. To complete this effort, focus will be given on development products that meet user preferences and niche market. Other than that, Regional and International cooperation will be reinforced to guarantee the product market local commodities in global markets and use of the latest information and communication technology will be improved.

Thrust 6:

Accelerating the Development of Smallholders and Entrepreneurs

Smallholder commodities will continue to be developed through an integrated development approach, including promoting replanting programs using quality plant materials, provide technical and technical advice increase the use of mechanization. This sector was also strengthened by promoting the management of smallholders in batches, including integrated with value added processing activities.

Thrust 7:

Developing and Strengthening Human Capital in Commodity Industries

Human capital development will be strengthened, especially to increase the number of skilled and semi-skilled workers to spur modernization and enhance the competitiveness of the commodity industry. Focus will be given to increase the level of skills and knowledge of employment at both upstream and downstream levels in using and dissemination of the latest technology. Human capital development efforts will be expanded through the strengthening of the role of the Plantation Institute and Malaysian Commodities (IMPAC), including establishing partnerships with the industry. Recognition of courses and training skills offered will improve career image and able to attract more local workforce to join the commodity industries. In addition, collaboration with local and foreign of higher learning institutions in the field required by industries such as biotechnology, mechanization and plantation engineering will be developed to fulfil industrial needs.

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 planning in manpower.

2.6.1 Industry Economic Growth

The Malaysian food industry is dominated by small and medium scale firms (Malaysian Investment Development Authority 2012). Currently, the industry's key growth areas are functional food, healthy food, convenient food, food ingredients and halal foods. In terms of external environment, the industry is also undergoing numerous changes brought about by factors such as rising production costs, technological developments, shifting demand patterns, changes in competitive groupings, etc.

There are more than 9000 firms in Malaysia, of which 95% are classified as small-scale in food industry.²⁷ These small-scale food processing enterprises exhibit certain characteristics distinguishing them from the large-scale ones. Apart from being family-based or single proprietorship type of ownership, the majority of these Small and Mediums Enterprise (SMEs) tend to operate under a simple organisational structure.

Notwithstanding the above, the food processing industry is generally driven by consumers' retail pull. For instance, a study by Connor (1988) about the US food processing industry have found an increase in variety of consumer demand being the norm for this industry. Studies conducted in the West have also shown that innovation, high rate of new food product development and exploration of new markets are effective ways for SMEs to gain competitive advantage.²⁸ Thus it could be seen that the success of the food processing industry, in both domestic and International markets, depends on a broad range of factors.

Table 2.13 below shows the overall the performance of manufacturing sub-sector including food processing in Malaysia. In this work, we are focusing on two components which are gross output and number of persons engaged. With Petroleum, chemical rubber and plastic products subsector was dominated, this contributed to the gross output of the manufacturing sector in 2014 with a value of RM 307.0 billion (30.4 %). This was followed by another sub-sector such as electrics, electronic and optical products which accounted for RM 232.2 billion (23.0 %). These two subsectors contributed up to 53.4 % of total manufacturing output. However, in terms of the number of persons engaged, these two sub-sectors recorded 48.0 % of employees as against 59.2 % by other sub-sectors. Meanwhile, vegetable and animal oils and fats and food processing also play a crucial role in driving the Malaysia economy and contributed to gross output with a value of RM 201.0 billion (19.9 %) and number of persons engaged was 265,641 (12.7 %). Even though these sub-sectors recorded the lowest for both of gross output and number of persons engaged but it still contributed the highest compared to other sub-sectors on the economy industry in Malaysia.

²⁷ Ghani. S. (1995). *Small-scale Food Processing Enterprises in Malaysia*. Food Technology Research Station MARDI. Retrieved from <http://www.fttc.agnet.org/library.php?func=view&id=20110716000322>

²⁸ Avermaete et al. (2003) *Determinants of innovation in small food firms*. Retrieved from <https://www.emeraldinsight.com/doi/pdf/10.1108/146010603104591633>

Table 2.13: Performance Manufacturing sub-sector

Sub-sector	Gross output (RM billion)	Intermediate Input (RM billion)	Value of fixed assets (RM billion)	Number of persons engaged	Salaries & wages (RM billion)
Vegetable and animal oils & fats and food processing	201.0	172.0	31.5	265,641	6.5
Beverage and Tobacco products	9.7	6.8	2.9	16,266	0.6
Textiles, wearing apparel and leather products	14.0	10.0	4.8	114,418	2.0
Wood products, furniture, paper products and printing	60.6	44.1	24.0	350,616	7.9
Petroleum, chemical, rubber and plastic products	307.0	236.1	74.9	347,179	11.3
Non-metallic mineral products, basic metal and fabricated metal products	116.0	90.9	37.9	300,143	8.8

Sub-sector	Gross output (RM billion)	Intermediate Input (RM billion)	Value of fixed assets (RM billion)	Number of persons engaged	Salaries & wages (RM billion)
Electrical, electronic and optical products	232.2	171.9	48.2	508,542	17.4
Transport equipment, other manufacturing and repair	70.8	52.8	15.8	193,392	6.5
Total	1,011.3	784.6	240.0	2,096,197	61.0

(Source: Department of Statistics, 2016)

On the other side, the gross output by manufacturing industry group show in Table 2.14. The manufactures of refined petroleum products as well as manufacture of electronic components and boards were the largest contributors to the gross output in manufacturing sector for 2014. All these group accounted for RM 388.5 billion (38.4 %) in total gross output. For manufacture of other food products, it is shown as the lesser contributor to gross output with the value of RM 29.4 billion (2.9 %) but it still considered a vital manufacture which is one of the factors for contributing for economy growth.

Table 2.14: Gross output by manufacturing industry group

Industry group	Description	Gross output (RM billion)	%
192	Manufacture of refined petroleum products	159.7	15.8
104	Manufacture of vegetable and animal oils & fats	133.5	13.2
261	Manufacture of electronic	95.3	9.4

Industry group	Description	Gross output (RM billion)	%
	components and boards		
201	Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics & synthetic rubber in primary forms	62.6	6.2
221	Manufacture of rubber products	36.3	3.6
262	Manufacture of computers and peripheral equipment	32.7	3.2
259	Manufacture of other fabricated metal products; metal working service activities	30.7	3.0
264	Manufacture of consumer electronics	29.5	2.9
107	Manufacture of other products	29.4	2.9
222	Manufacture of plastics products	28.9	2.9
Other groups		372.7	36.9
Total		1,011.3	100

(Source: Department of Statistics, 2016)

Based on data from the Department of Statistics in Figure 2.1, Malaysia's economy grew stronger with the top 7 sub-sector sales value in March 2018 being high. The favourable performance was by Electrical and Electronic product with 10.5 % higher than 5.7 % recorded in previous sales. Another sector such as foods, beverage and tobacco show a significant increase of 5.0 % from 0.8 % while wood, furniture, paper product and printing also increased from -2.3 % to 3.5 % compared to previous sales. However, another sub-sector has decreased in sales such as the sub-sector from Petroleum, chemical, rubber and plastic. In

terms of total employees engaged in the Manufacturing sector in March 2018, the count was 1,068,116 persons, an increase of 2.1 % or 22,076 as compared to the 1,046,040 in March 2017. Salaries and wages paid rose 11.9 % (RM 410.9 million) an increase of RM 3,863.4 million, thus registering an average salaries and wages per employee of RM 3,617 in March 2018 while sales value per employee gained 1.7 %, RM 64,103 as compared with the same month of the previous year.

			
SALES VALUE	NUMBER OF EMPLOYEE	SALARIES & WAGES	SALES VALUE PER EMPLOYEE
RM 68.5 billion 3.9 % February 2018 (4.9 %)	1,068,110 person 2.1 % February 2018 (2.2 %)	RM 3,863.4 million 11.9 % February 2018 (16.7 %)	RM 64,103 1.7 % February 2018 (2.6 %)



Figure 2.1: Sub-sectors sales value of Manufacturing on March 2018

(Source: Monthly Manufacturing Statistics, 2018)

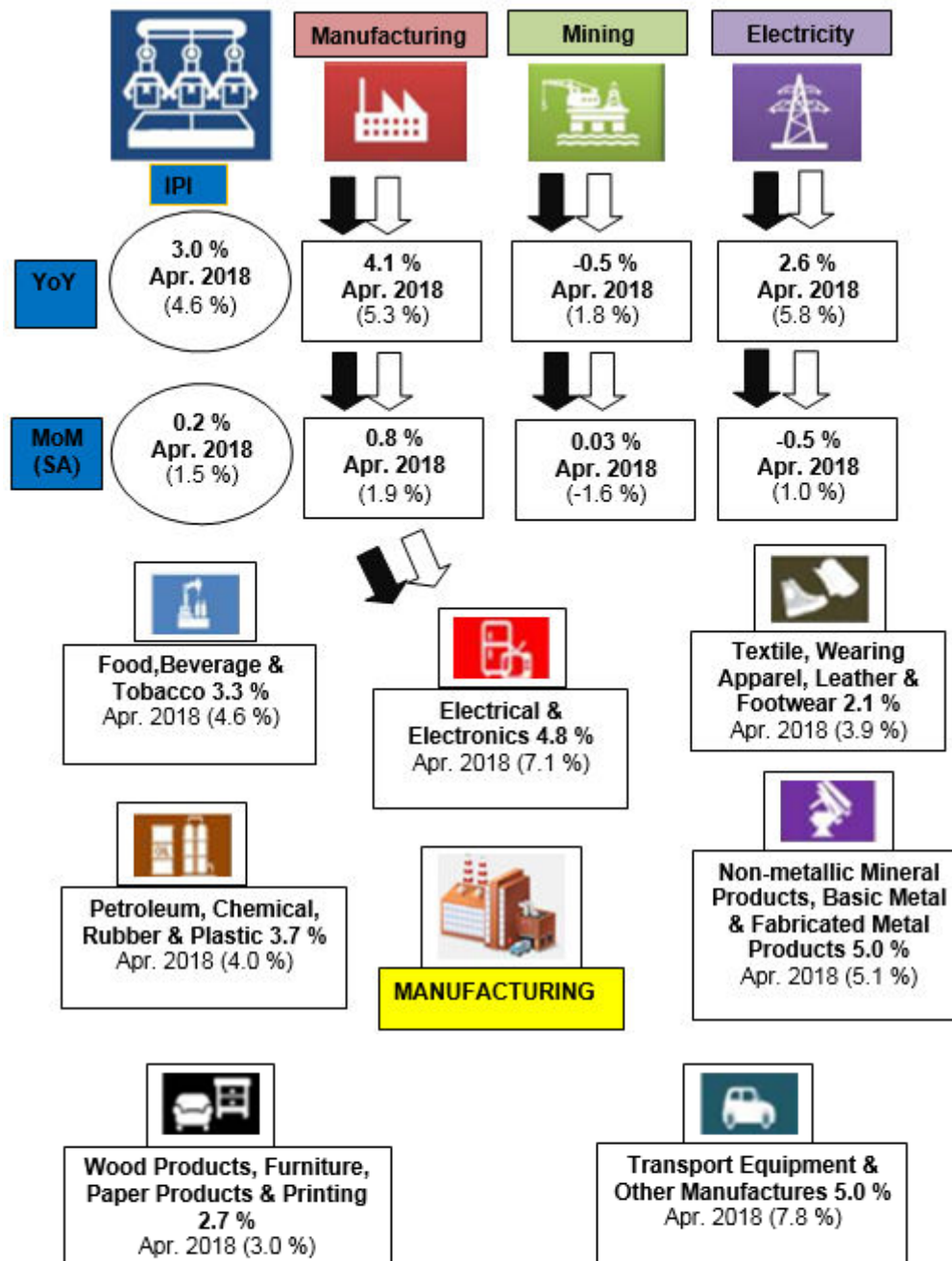


Figure 2.2: Malaysia's Industrial Production Index (IPI) Year-on-Year increased by 3.0 % in May 2018)

(Source: Index of Industrial Production, 2018)

Figure 2.2 above shows Malaysia Industrial Production Index (IPI) which has increased by 3.1 % in May 2018 as compared with the same month of the previous year. The growth was supported by the increase in the index of Manufacturing (4.1 %) and the Index of Electricity (2.6 %). Meanwhile the index

of Mining posted a decrease of 0.5 % from 1.8 %. The manufacturing sector output rose by 4.1 % in May 2018 after recording a growth of 5.3 % in April 2018. The major sub-sectors which registered increases in May 2018 were Electrical and Electronic Equipment Products (4.8 %), Petroleum, Chemical, Rubber and Plastic Products (3.7 %) and Non- Metallic Mineral Product, Basic Metals and Fabricated Metal Products (5.0 %) while the minor sub-sectors such as Food, Beverage and Tobacco (3.3 %), Textile, Wearing Apparel Leather, Footwear (2.1 %) and others also contributes to the Industrial production in Malaysia. The Mining sector output registered a decline of 0.5 % in May 2018 as compared to the same period of the previous year. The decline was contributed by the decrease in the Natural Gas Index (-4.8 %) whereas Crude Oil index increased by 4.7 %. The Electricity output increased by 2.6 % in May 2018 after recording an increase of 5.8 % in April 2018.

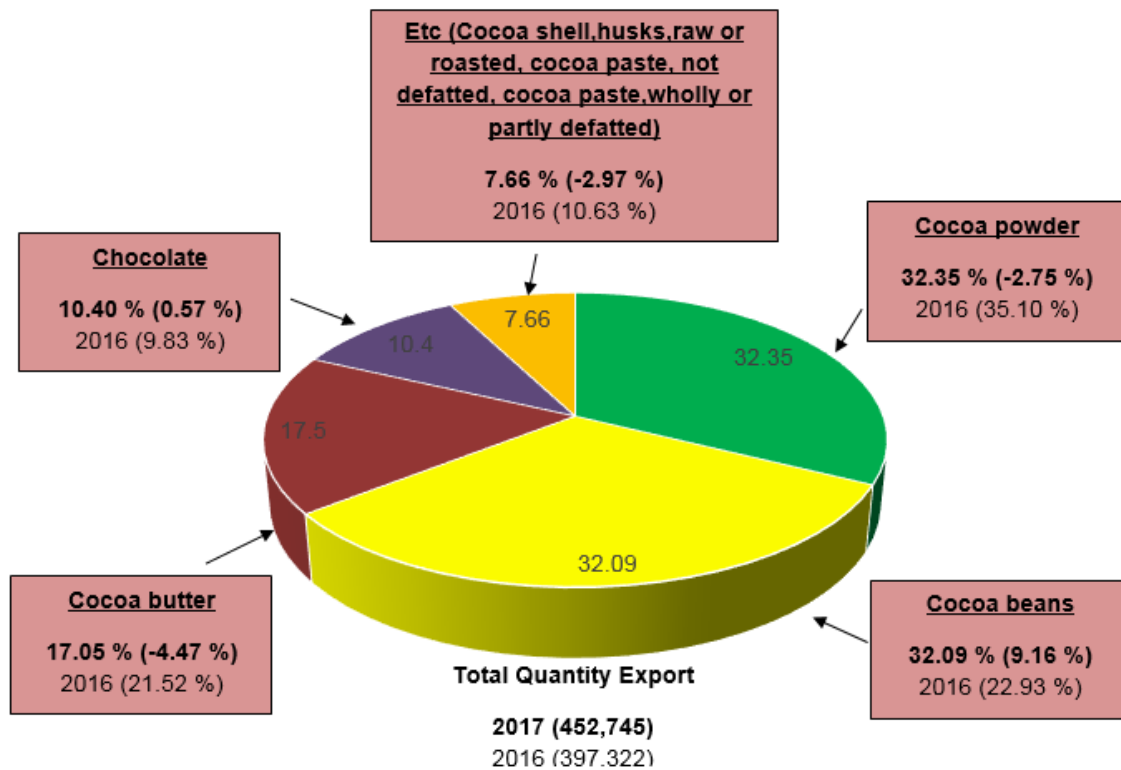


Figure 2.3: Export of Cocoa beans and Cocoa products in 2017
(Malaysia Cocoa Board, 2018)

Figure 2.3 above shows data of export of cocoa beans and cocoa products in year of 2017. According to Malaysia Cocoa Board, total quantity export of cocoa beans and cocoa products increase 13.95 % (452,745) in 2017 compared to (397,322) in 2016. Cocoa powder and cocoa beans dominate the export which contribute about 32.35 % and 32.09 %. In cocoa beans products, show increased about 9.16 % (32.09 %) in 2017 compared to 2016 (22.93 %).

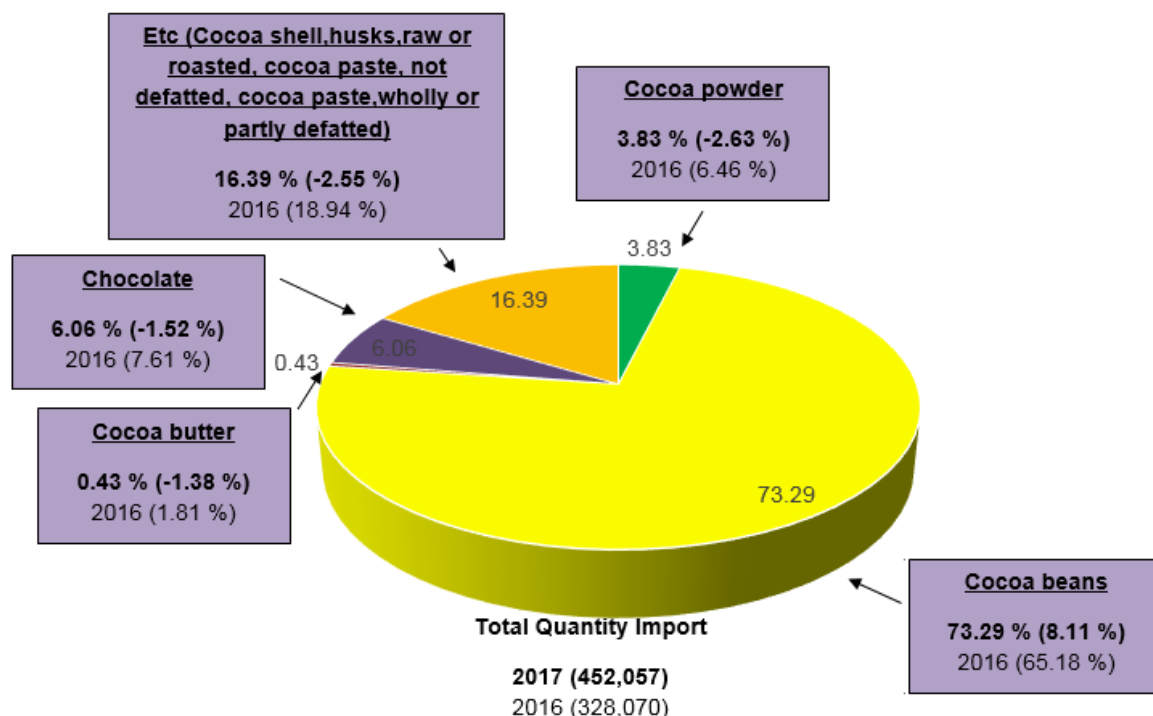


Figure 2.4: Import of Cocoa beans and Cocoa products in 2017
 (Malaysia Cocoa Board, 2018)

Figure 2.4 above shows data of import of cocoa beans and cocoa products in year of 2017. According to Malaysia Cocoa Board, total quantity import of cocoa beans and cocoa products increase 29.56 % (452,057) in 2017 compared to (328,070) in 2016. Cocoa beans dominate the import which contribute about 73.29 %. In cocoa beans products, show increased about 8.11 % (73.29 %) in 2017 compared to 2016 (65.18 %).

2.6.2 Employment

According to the Department of Statistics Malaysia a total of 1,028,301 persons are engaged in the local manufacturing sector, with an average monthly salary of RM3,122 paid per employee.²⁹ Some of the key sub-sectors within the manufacturing industry in Malaysia are petroleum, chemical, rubber and plastic products, food, beverages and tobacco, electrical and electronic products.

²⁹ World Bank Statistic (2018, June) *Employment by economic sector in Malaysia 2017*. Retrieved from <https://www.statista.com/statistics/319036/employment-by-economic-sector-in-malaysia/>

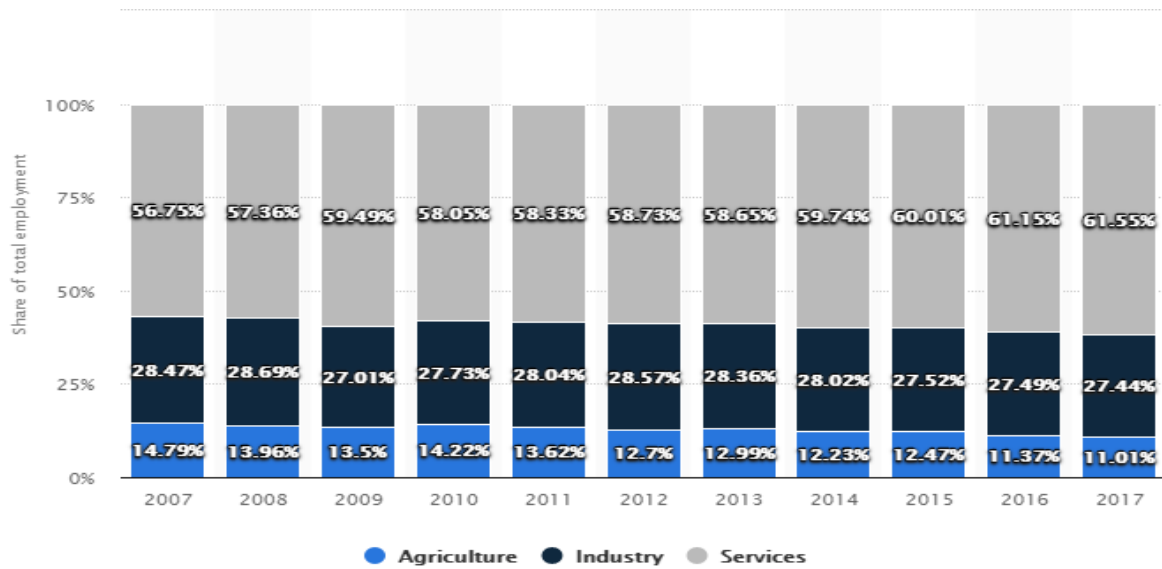


Figure 2.5: Employment by economic sector in Malaysia (2007-2017)

(Source: World Bank Statistic, 2018)

Based on Figure 2.5, shows the employment from economic sector such as agriculture, industry and services in Malaysia. The statistic shows the distribution of employment in Malaysia by economic sector from 2007 to 2017. In general, the service sector was dominant from 2007-2017, followed by industry sector and agriculture sector. In 2017, 11.01 % of the employees in Malaysia were active in the agricultural sector, 27.44 % were in industries and 61.55 % in the service sector.

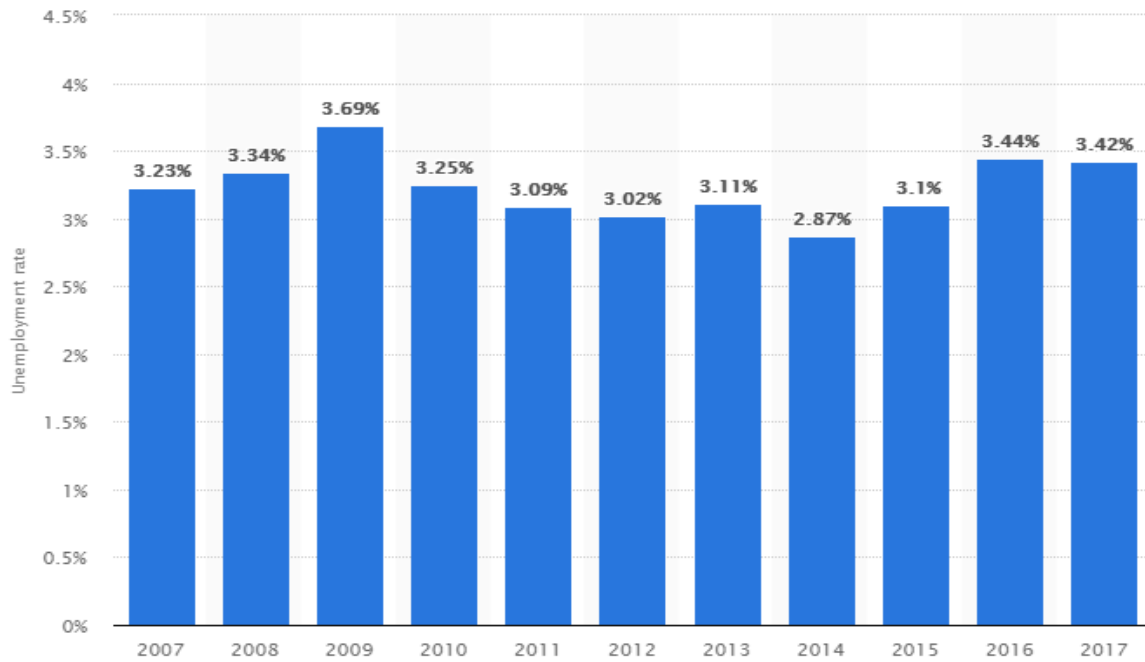


Figure 2.6: Unemployment by economic sector in Malaysia (2007-2017)
(Source: World Bank Statistic, 2018)

This statistic shows the unemployment rate in Malaysia from 2007 to 2017 in Figure 2.6. In 2017, the unemployment rate in Malaysia was at approximately 3.42 % which is reduced from the previous year.

Malaysia's unemployment is relatively low and stable at around 3 % which means the population is experiencing close to full employment. The country reached its lowest level of unemployment in 2014, with a rate of 2.85 percent. Malaysia's vibrant economy is considered one of the strongest in Southeast Asia. Together with years of political stability, it has been supporting such a low unemployment rate with good growth rates each year. Industry has been a strong contributor to GDP and currently provides around 30 percent of employment opportunities. But even more about 50 % of GDP is generated by the services sector. Given the country's strong and growing economy, the average GDP per capita is growing at high rates as well.

However, despite these positive statistics, news reports state that the number of job seekers and those unemployed – the three percent - are generally young people, both graduates and non-graduates, who have had trouble entering the job market. Because of this, the Malaysian government is encouraging companies to open up employment opportunities specifically to young adults. The favourable economic climate should help. Yet, there have also been some complaints about underemployment and gender discrimination within the country.

Based on Figure 2.7 below show the total salaries & wages paid in Malaysia in 2015 amounted to RM245.69 billion. The Services sector posted the highest salaries & wages which was RM131.53 billion with a share of 53.5 %, followed by Manufacturing sector with RM65.49 billion (26.7%) and Construction sector with RM32.90 billion (13.4%).

In terms of economic activities, the Services sector recorded the highest number of employments, which was 4.8 million persons (54.9%) and followed by the Manufacturing sector with 2.1 million persons (24.3%).

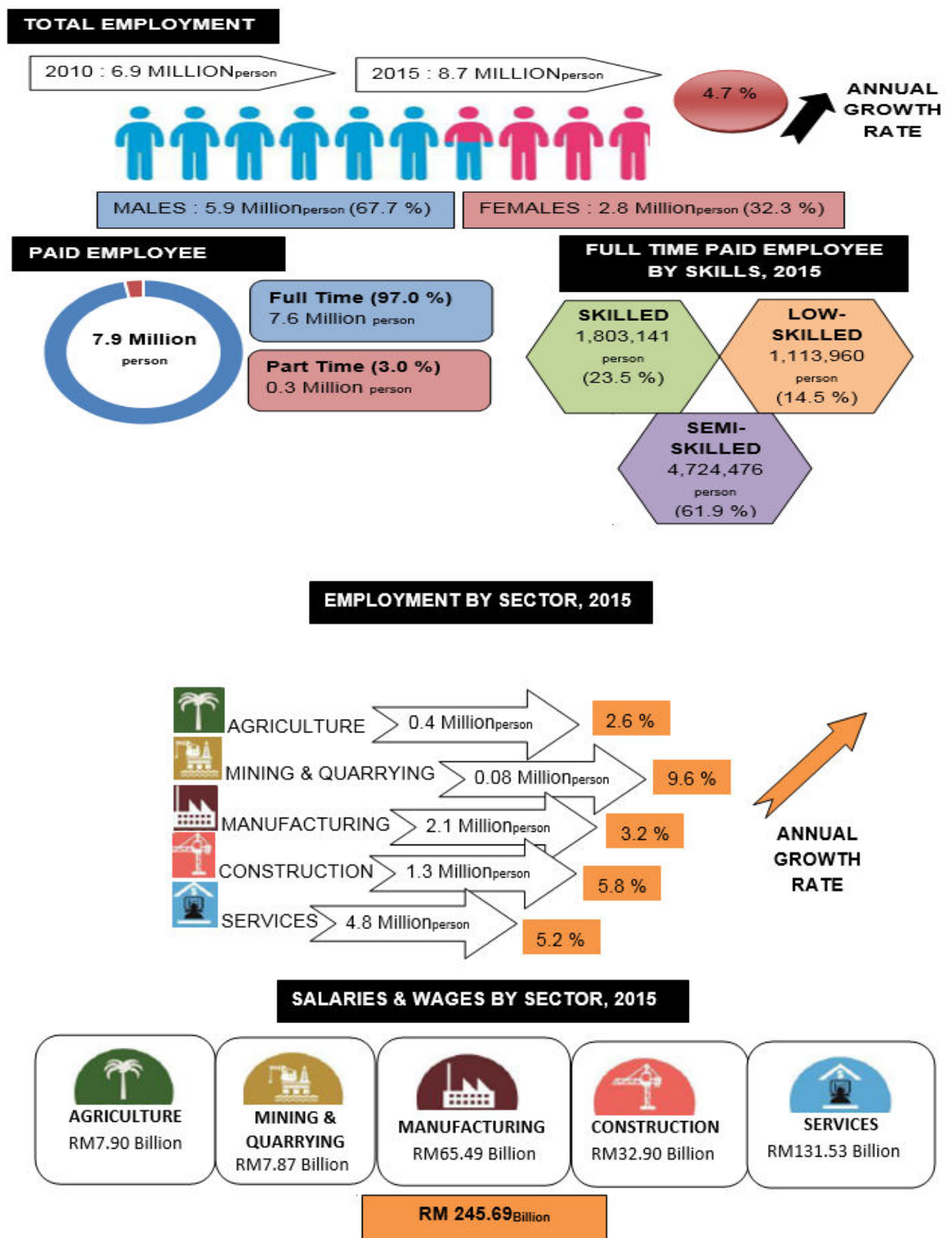


Figure 2.7: Malaysia's Employment and Salaries Wages Statistics for 2017
(Source: Department of Statistics Malaysia.2018)

2.6.3 The Manufacture of Other Food Products industry and the 4th Industrial Revolution (Industry 4.0)

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

- Autonomous Robots;
- Big Data Analytics;
- Cloud Computing;
- Internet of Things (IOT);
- Additive Manufacturing (3D printing);
- System Integration;
- Cyber-security;
- Augmented Reality; and
- Simulation.

Figure 2.8 shows the description for each main pillar of Industry 4.0

 Additive Manufacturing	 Simulation	 Big Data Analytics	 Cloud Computing	 Cybersecurity
Advancing with the use of new materials opening completely new possibilities. For example, 3D printing of organic tissues has created opportunities for growing live organs. It is revolutionising traditional production,	While many engineers are already familiar with simulations in the field of product design, the advent of augmented reality, artificial intelligence and big data is expected to take simulations to the next level. It will be possible to simulate	Increasingly big data techniques are being applied in manufacturing industries to improve customer experience and product quality, realise energy efficiencies, and conduct predictive	Past industrial revolutions required significant capital as a ticket to entry. With Cloud Computing many of the Industry 4.0 technologies can be made available to even smaller companies as a utility with	The industrial communication is expanding and strongly connected, digital security becomes a critical aspect that must not be overlooked in the industrial environment. It has now become more complex, as it consists of connected devices and environments

aided by a recent surge in metal additive printing	manufacturing processes using different production settings to find the optimal way to manufacture a product. Simulators can also be used to test product usage under different operating environment using different types of materials	maintenance, it is now possible to collect masses of data from several different sources to direct decisions that anticipate product or equipment failure	minimal upfront capital investment. Companies can leverage cloud-based product design, simulation, artificial Intelligence, and big data solutions to improve their production processes and build products better suited for their customers	that cannot be protected by traditional cybersecurity approaches. Current cybersecurity has largely been developed for IT-centric devices and now facing new challenge on how to embed security functionality into the IoT devices with sophisticated cybersecurity
 Augmented reality	 Internet of Things (IoT)	 Autonomous Robots	 System Integration	
While the Initial Augment Reality technologies are still in nascent stages, they are advancing at a rapid pace. Some of the first applications can be found in the delivery of Information and training. For example, Augmented Reality can be used to deliver	Industry 3.0 brought in an era of computing and inter-connectedness but it often relied on humans to make even the trivial decisions. Industry 4.0 technologies embody an unprecedented proliferation of sensors. Combined with other technologies such as artificial intelligence and	Transformed towards its next generation. Robots can do more on its own, including learning on the job and team up with other robots and humans. This technology allows systems to think act and react autonomously as well as	System Integration occurs in vertical (within the industry value chain) and in horizontal systems (across multiple value chains) eventually achieving end-to-end digital integration across the entire value chains	

part replacement instructions to maintenance staff in the field	Big Data, it is now possible to envisage entirely autonomous systems that revolutionise manufacturing	conduct remote decision making. This can help contribute to a company's competitiveness, productivity and profitability	
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Figure 2.8: Main Pillars of Industry 4.0

(Source: Ministry of International Trade and Industry (MITI), 2018)

- **Industry 4.0 in Manufacture of Other Food Products Industry**

Throughout the research, the input on Industry 4.0 specifically in the Food Industry will be obtained from the industry survey respondents and will be presented in Chapter 4 of this report. Therefore, in this section of the report, Chapter 2, the available information of examples and efforts of Industry 4.0 implementation in the Food Industry are as listed below:

The use of automation in food manufacturing in Malaysia are encouraged to automate and embrace the fourth industrial revolution or industry 4.0 in an effort to transform Malaysia's manufacturing landscape by helping to reduce reliance on manual labour and keep exports competitive. While most manufacturers are aware of the Industry 4.0 concept, only 30 per cent have started to invest and leverage on modern technology. Embracing the fourth industrial revolution would mean that manufacturers will move up the value chain and contribute to a knowledge-based economy.

Essentially, the fourth industrial revolution focuses on "smart factories", which are associated with robotics, sophisticated sensors for data input, predictive analytics and Internet of Things (IoT). As technology is becoming increasingly

integrated, manufacturers would be able to reap cost savings in real-time quality control and maintenance.

In terms of food processing industry, the potential of automation in manufacturing, accounting for RM18 billion in revenue last year is expected to pass the RM20 billion mark for 2016 due to good growth potential in processed foods and beverages. Demands for automation in Malaysia's food processing industry are indeed surging. In a white paper titled "Malaysia's Automation Sector: Pursuit of Opportunities and Shift in Industrial Investment", Solidiance screened over 190 automation vendors to reveal that vendors have set their eyes on the Food Processing and Chemical industries as their new priorities.

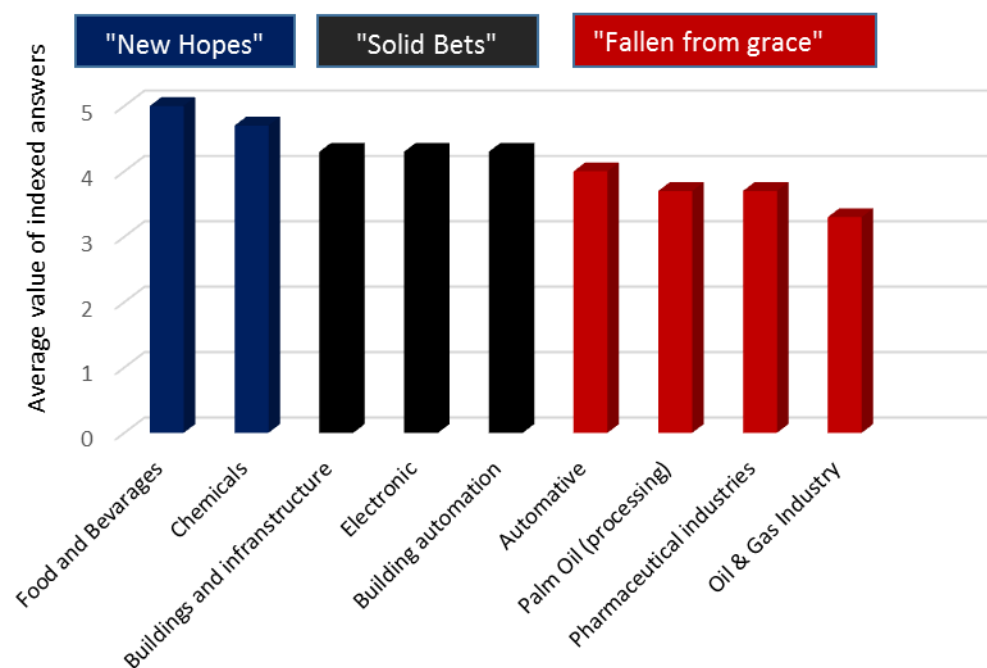


Figure 2.9: Ranked Automation Vendor's Priorities for Relevant Industry Sectors (2015)
(Source: Solidiance's research and analysis)

- “New hopes”, as these sectors appear to have suddenly high expectations in them
- “Solid bets”, sectors that had performed well in the past and could be at least stable in coming years
- “Fallen from grace”, large sectors, once hailed motors of growth, seem to have lost their importance here

2.7 Existing National Occupational Skills Standards (NOSS) Relevant to The MSIC Section C and Group 107

Currently there are 46 National Occupational Skills Standards (NOSS) developed by *Jabatan Pembangunan Kemahiran* (JPK) that are relevant to the sub-sectors and areas in the Manufacture of Other Food Products. The details of the existing NOSS relevant to the Manufacture of Other Food Products are in the tables below

Table 2.15: Manufacture of Other Food Products related NOSS

MSIC Group	Corresponding Noss Code	Noss Name	Level
107 Manufacture of Other Food Products	1) C107-001-3:2017	Fresh Food Product Packaging Operation	Level 3
	2) C107-002-5:2017	Food Production Management	Level 5
	3) C107-002-4:2017	Food Production Operation Administration	Level 4
	4) AF-018-3:2014	Food Production	Level 3
	5) AF-012-3:2012	Processed Food Product Packaging Operation (Semi/Finish Product)	Level 3
	6) AF-012-2:2012	Processed Food Product Packaging Operation (Semi/Finish Product)	Level 2
	7) HT-015-3:2013	Handmade Chocolate Production	Level 3
	8) HT-013-5:2012	Pastry & Bakery Management	Level 5
	9) HT-013-4:2012	Pastry & Bakery Management	Level 4
	10) HT-014-3:2011	Pastry Production	Level 3
	11) HT-014-2:2011	Pastry Production	Level 2
	12) HT-014-3:2011	Bakery Production	Level 3
	13) HT-014-2:2011	Bakery Production	Level 2

(Source: NOSS Registry May 2018, *Jabatan Pembangunan Kemahiran* (JPK))

2.8 Chapter Summary

Clearly, the area of Manufacture of Other Food Products is one of the main contributors to the economic performance and foreign investment. However, the Food, Beverage and Tobacco area also showed a significant boost making it one of the bigger contributors to the economy as well.

As of now, stakeholders in the industry comprise of government agencies which are DSD, MIDA, MITI, MOA, JAKIM, MARDI, BKMM and FAMA. The stakeholders are simply involved in the development and monitoring of the industry in terms of compliance to the relevant acts and regulations. The main industry associations are the MIFT, FMM and HDC.

The food products manufacture includes products regulated by the Food Act and Trade Description Act as foods must be ensured to be free of contaminants from chemical processes as well as pesticides or carcinogens in order to be safe for consumption. In this report, then, the acts highlighted are ones related to the end consumer in general and also acts related specifically to the manufacture of foods, in ways it is made or sold.

There have been 13 NOSS developed for the industry, however, due to the fast-moving advancement of technologies in the industry and in order to increase employment mobility for the workforce, it is imperative that the Occupational areas are redefined in the Occupational Structure. The purpose is for allowing scalability of skills and to accommodating the emerging skills required in the current Industrial Revolution which is the 4th Industrial Revolution. Segmentation of the industry based on the Malaysian 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 10: Manufacture of Food Products, and Group 107: Manufacture of Other Food Products.

To identify the above, structured research approaches must be applied. The research methodology used for this study is elaborated in Chapter 3.

CHAPTER 3: METHODOLOGY

3.1 Chapter Introduction

This chapter aims to describe the methodology that is to be used in the Occupational analysis process for developing the Occupational Framework (OF) for the Manufacture of Other Food Products.

3.2 Research Methodology

Qualitative analysis was selected in this research as the main method in obtaining and analysing the necessary input in view of the Manufacture of Other Food Products industry's Occupational Framework and the required types and sources of information to further establish the Occupational framework.

The rationale of qualitative analysis was selected as the method of research is of below:

- Not only the what, where and when are investigated but also the why and how of the decision-making process;
- Smaller samples are required making it more concentrated; and
- Unique themes that illustrate the range of the meanings of the subject matter are emphasised rather than the significance of the occurrence statistically.

Inductive reasoning is used in this process which translates to themes and categories emerging from the data through careful examination by the researcher and constant comparison. The following methods are used in combination to gather information in this study:

- Document analysis;
- Survey and Industry Site visit, and
- Focus Group Discussion (FGD) workshops.

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

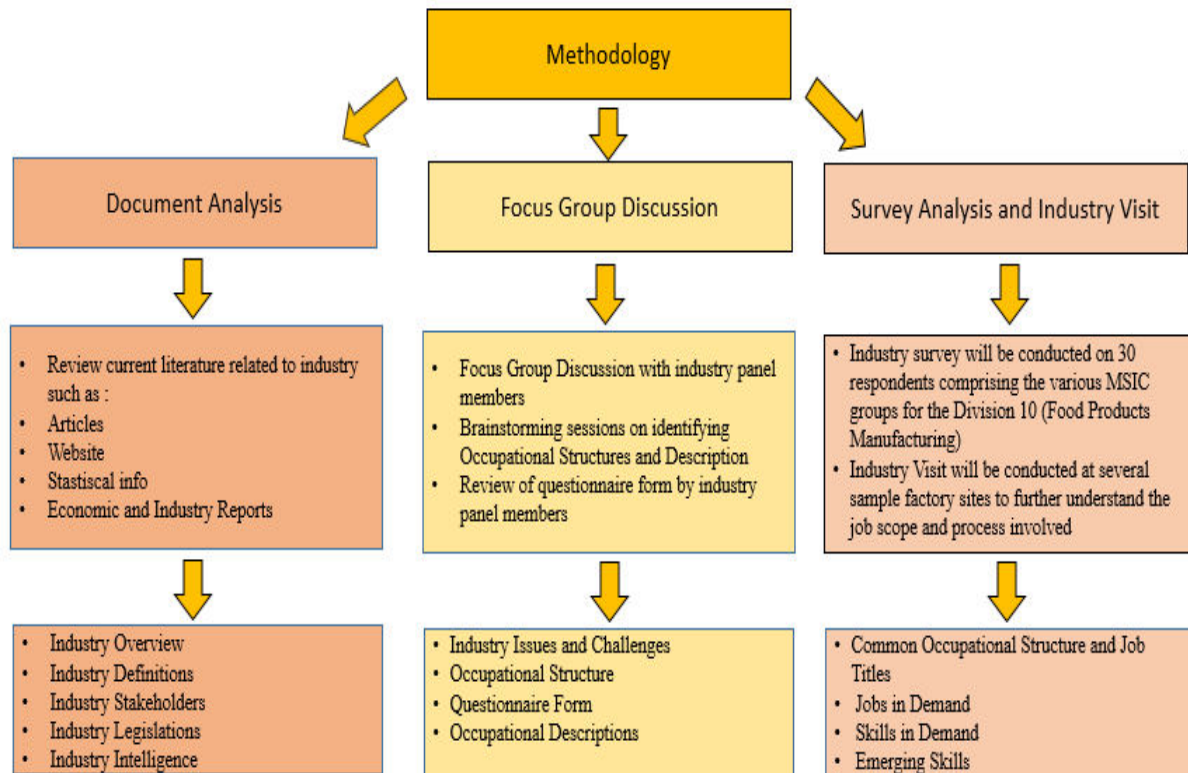


Figure 3.1: Operational Framework of Research

The development phases of the Division 10: Manufacture of Other Food Products OF is of below.

3.2.1 Phase 1: Inception

a. Document Analysis

In the First Phase Namely Inception, analysis of documents or literature review was made to get an overview of the Industry Definition, Stakeholders, Acts and Industry Intelligence of the industry itself.

During this stage, information that is appropriate and relevant published by the government, regulatory and professional bodies, news agencies, research agencies and any other relevant sources to the background information of the

Manufacture of Other Food Products industry were reviewed and analysed. Therefore, most information obtained was mainly on this particular 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:

- MIDA Investment Performance 2017 Report
- Department of Statistics Census Report
- Department of Statistics data on Employment and Industry Productivity
- MITI Frequently Asked Questions (FAQ) on Industry 4.0
- NOSS Registry May 2018
- Malaysian Standard Industrial Classification (MSIC) 2008
- Online newspaper/magazine articles
- Official websites of industry stakeholders and legislations
- 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 Manufacture of Other Food Products industry.

b. Industry Engagement / Focus Group Meeting with Development Panel

A meeting of Industry Engagement/Focus Group Discussion (FGD) with the development panel members was carried out for confirming the obtained findings during document analysis with them, reviewing the draft of questionnaire form so that the response of the industry is able to be gauged and obtaining the industry intelligence information such as issues and challenges and implementation of Industry 4.0. This is because there is certain information especially for the industry intelligence section that is not open for literature availability.

Obtained facts were discussed and presented during the literature review to the Development Panel members who are representatives from various sectors of the industry in focus group workshop sessions for their review and confirmation. 8 representatives have participated the Focus Group Discussion as listed below:

Table 3.1: List of Focus Group Discussion panel members

NO	NAME	POSITION	ORGANISATION	MSIC GROUP
1	Mohammad Rizman Bin Niger Mahidin	Economic Affairs Officer, Development Chocolate Entrepreneur Section	Economic and Market Development Division, Malaysian Cocoa Board	10731 Manufacture of cocoa products
2	Wan Aidah Bt Wan Ibrahim	Officer Researcher, Food Product Development	Cocoa Downstream Technology Division, Malaysian Cocoa Board	10732 Manufacture of chocolate and chocolate products
3	Isa Bin Johari	Chief Executive Officer	Yosh Ventures Sdn Bhd	1071 Manufacture of bakery products 10711 Manufacture of biscuits and cookies
4	Mohd Irwan Bin Sanusi	Senior Supply Chain Group Manager	KPF Trading Sdn Berhad	1072 Manufacture of sugar 10721 Manufacture of sugar

NO	NAME	POSITION	ORGANISATION	MSIC GROUP
				10722 Manufacture of sugar products
5	Khairunizah Hazila Khalid	Senior Researcher Officer	Center for Food Science and Technology Research, MARDI	1079 Manufacture of other food products n.e.c
6	Muhammad Iqbal Bin Abdullah	Research Officer and Figureered Center Manager (SKM Food Production)	MARDI	1079 Manufacture of other food products n.e.c
7	Nor Sa'adah Ghazali	Managing Director	Ketodiet Sifu Sdn Bhd	1074 Manufacture of macaroni, noodles, couscous and similar farinaceous products
8	Anna Mariana Sherene Samsudin	Managing Director	Mariana Food Network	1075 Manufacture of prepared meals and dishes

Moreover, an addition of initial information was also collected from the Focus Group Discussions such as the Occupational Structures, Skills in Demand and Emerging Skills. The following areas were the centre of the analysis scope:

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

Members of the Focus Group Discussion also considered as the core development panel members for this research, were in hand with the facilitator in producing the draft survey questionnaire in the first Focus Group Discussion held on the 31 August and 22 September 2018. Reference of this questionnaire can be found in Annex 3 of this report. It aims to extract information on the vital areas from the industry representatives.

The industry engagement sessions involving industry players, government agencies and subject matter experts have its dates, venue and activities set and they are as what follows:

Table 3.2: List of Industry Engagement Sessions

No.	Date	Venue	Activity
1.	31/08/2018-02/09/2018	Ibis Style Hotel, Cheras	Discussion with the panel from different food industry
2.	22/09/2018-23/09-2018	Ibis Style Hotel, Cheras	Discussion with the panel from different food industry

The next phase would see the advancement of the Occupational descriptions made by the development panel, and the jobs in demand, skills in demand and emerging skills which are to be confirmed via the industry survey.

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

The Review Panel who comprised of industry representatives would then review and validate draft report and survey questionnaire. Annex 3 includes a sample of the validated survey questionnaire of this report.

The following table mentions the conducted evaluation sessions for reviewing the OF document.

Table 3.3: List of Evaluation Sessions

No.	Date	Venue	Activity
1.	19/09/2018	Ibis Style Hotel, Cheras	Presentation for JTPOF-1
2.	11/10/2018	JPK, Cyberjaya	Presentation for PEMANDU
3.	19/10/2018	Ibis Style Hotel, Cheras	Presentation for JTPOF-2

3.2.2 Phase 2: Interim

a. Interview Surveys

Concurrently conducted during the industry survey would be the interview surveys, where it will involve survey respondents comprised from all job areas under the Manufacture of Other Food Products. A 'house view' will be obtained in the interviews meaning the responses are agreed upon for the organisation. That is the rationale behind the target group for the survey being the representatives of the organisation's Human Resource or higher management. The aim is to collect information on the common Occupational structures used in many organisations, their job scopes, skills gap and emerging skills required. The targeted number of interview respondents is to be from each MSIC group which are 6 areas of Manufacture of Other Food Products. The targeted number of industry survey respondents is 40 companies but the actual number who respond to the survey is 33.

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

MSIC SECTION	C	MANUFACTURING	NUMBER OF TARGETED RESPONDENTS
MSIC DIVISION	10	MANUFACTURE OF FOOD PRODUCTS	
MSIC GROUP	107	Manufacture of other food products	
ITEM	1071	Manufacture of bakery products	7
	1072	Manufacture of sugar	7
	1073	Manufacture of cocoa, chocolate and sugar confectionery	7
	1074	Manufacture of macaroni, noodles, couscous and similar farinaceous products	7
	1075	Manufacture of prepared meals and dishes	6
	1079	Manufacture of other food products n.e.c.	6
		Total Number of Respondents	40
		Total Actual Number of Respondents	33

The size of the sampling shall not be too big (as mentioned before), for that the main goal is covering all sub areas under this specific area of research which comprised of manufacture of bakery products, sugar, cocoa, chocolate and sugar confectionary and manufacture of macaroni, noodles, couscous and similar farinaceous products.

b. Qualitative Data Analysis

The findings from these interviews in this report are to be tabulated and presented in Chapter 4 as Occupational Structure, Skills in Demand, Jobs in Demand and Emerging Skills.

The collected information that relates to organisation structures will be analysed during the next focus group discussion in deciding the Occupational Structure. Thematic reasoning will be used during the analysis of the data based on the main objectives of the research and the research scope as a guide.

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

3.2.3 Phase 3: Final

The OF Document final draft will be presented to the Review Panel at the Occupational Framework Technical Evaluation Committee meeting to get their critiques and approval before it is to be submitted to JPK. Details regarding these sessions can be referred in Table 3.2. With approval obtained from JPK, the document will be given to industry stakeholders in the final session of this research. The aim of the review and final handover session is to finalise the OF research project by having the final meeting with industry stakeholder representatives to be given explanation on the contents and findings of the research.

3.3 Chapter Summary

The main goal of this chapter is to establish a methodology used in the development of the OF for the Manufacture of Other Food Products. Comprising it are the overall development process, Occupational Structure development, Occupational Description development and list of industry engagements or evaluation sessions throughout the project. With Qualitative Analysis methods applied in this project to accomplish the objectives of the research, engagements in the industry as well as interviews with industry representatives are a vital piece of the data collection.

The questions posed in these industry engagements based on the research have been built to promote the needed responses manners that are clear and structured. Annex 3: Questionnaire shows these findings. The study findings, be it the OS, OD and the skills in demand are in the next chapter, Chapter 4: Findings.

CHAPTER 4: FINDINGS

4.1 Chapter Introduction

Based on the discussions with panel members during the development workshops, evaluation meetings and survey findings, the Manufacture of Other Food Products in Malaysia is categorised into 3 sub-sectors, which are actually based on the MSIC Groups

The scope of the analysis is based on 3 key areas, i.e. (a) the Occupational Structure (OS), (b) jobs and skills in demand, and (c) the Occupational Description (OD). This chapter therefore highlights the findings gathered on these key areas.

4.2 Surveys and Questionnaires Analysis

The respondents for the surveys and questionnaires are involving 33 companies, the designation of the respondents ranging from HR executives to senior managers. The results of the surveys and questionnaires are presented below:



Figure 4.1: Competency in demand

The respondents have explicitly marked the top 5 skills highly demanded by the employer are general attitude towards work, analytical and statistical skills, food product knowledge, sensory skills and English language competency.

BASED ON YOUR OBSERVATION, DO YOU THINK THE GRADUATES/ TRAINEE/ APPRENTICE/ CURRENT WORKERS POSSESS THE SKILLS REQUIRED BY THE INDUSTRY?

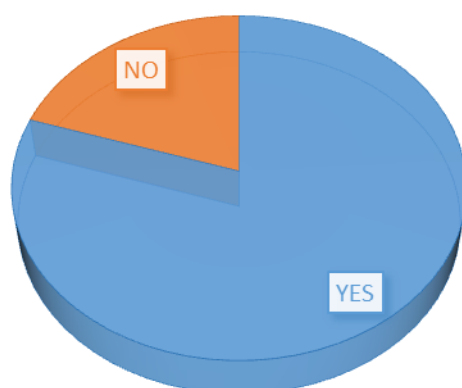


Figure 4.2: Skills mismatch responses

Only 20% 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 Figure below:

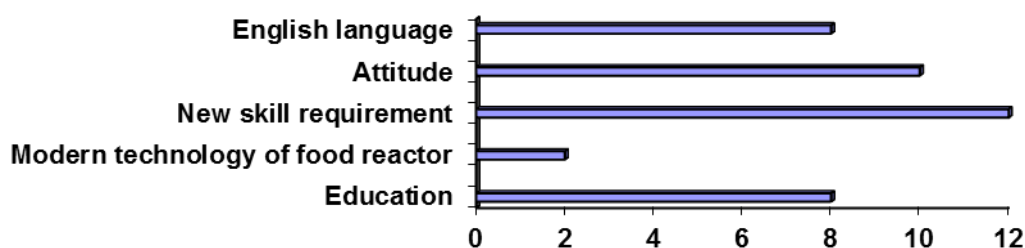


Figure 4.3: Reasons for skills gap

The respondents ranked major changes in new skill requirements as the main reason for skills gap and the attitude as the second main contributing factor.

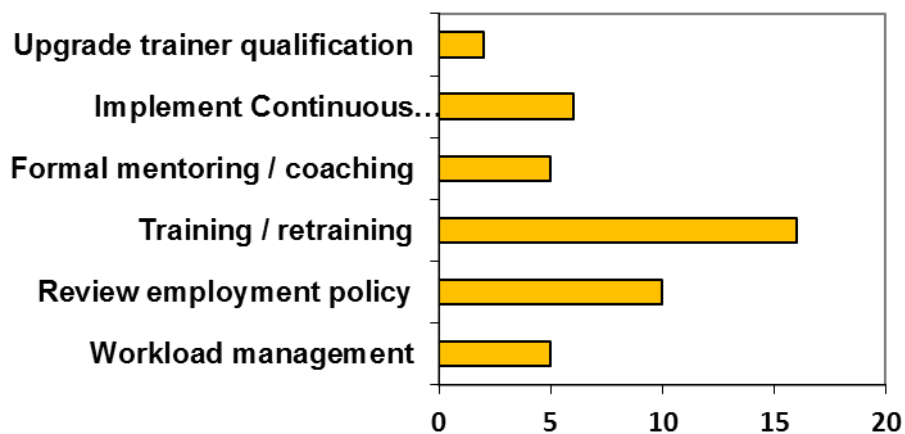


Figure 4.4: Solutions for skills gap

Majority of the respondents suggested that training or retraining must be revised and suits the current requirements of the industry.

4.2.1 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	Senior Managers, Product Development Manager, Senior Product Development Manager, Food Specialist, Senior Production Manager, Production Manager, Senior QA Manager, QA Manager and Manager
Semi-Skilled Workers	Food Technologist, Assistant Food Technologist, Product Development Executive, Assistant Executive, Production Executive, Production Supervisor, QA/QC Executive, Halal Executive, QA Assistant, Senior Chocolatier and Chocolatier
Low Skilled Workers	Production Senior Operator, Production Operator, QC Operator and Junior Chocolatier

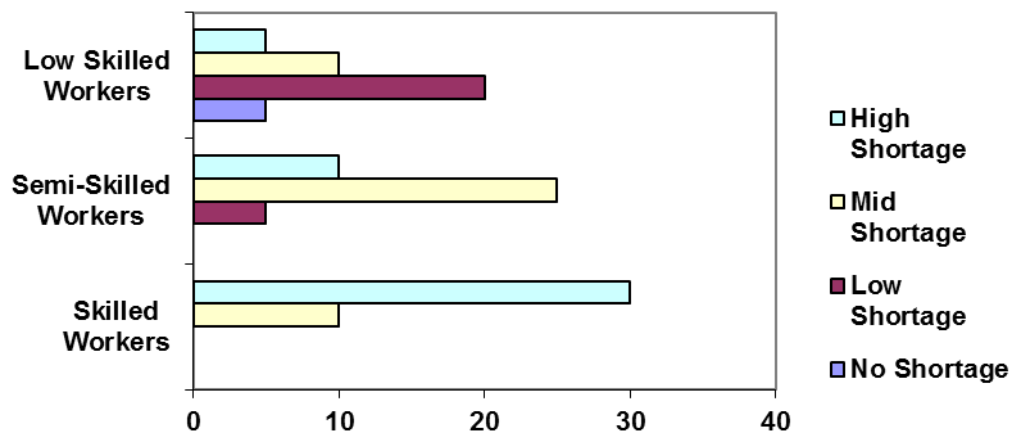


Figure 4.5: Jobs in demand for group 107

The skilled and semi-skilled workers for groups 107 are highly in demand as the current manpower supply is short of these 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.

4.2.2 Section 3: Emerging Skills

This section is trying to determine the readiness of industry players and the workers in the advent of IR 4.0. The technology drives or pillars of IR 4.0 is listed and the respondents have to decide the relevancy of each element in their line of duty.

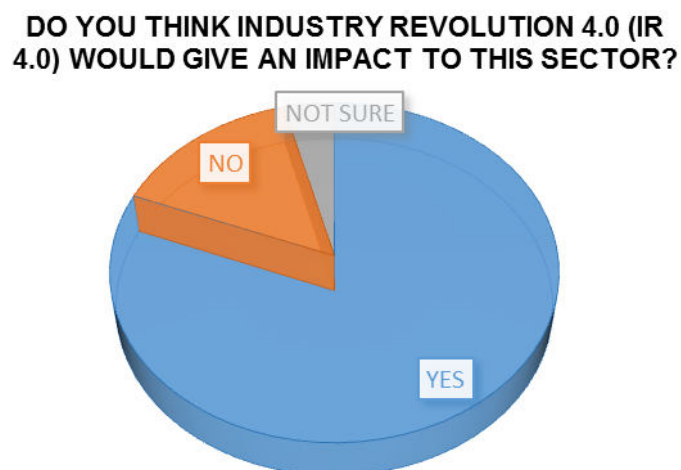


Figure 4.6: Impact of IR 4.0 to the industry

81% of the respondents agreed that IR 4.0 would give an impact to this sector. The respondents agreed that all the 9 technology pillars would affect the work of Research and Development on Other Food products and Handling and Maintenance Food Machine Operation especially for Level 4 and above as shown in Figure 4.7 below.

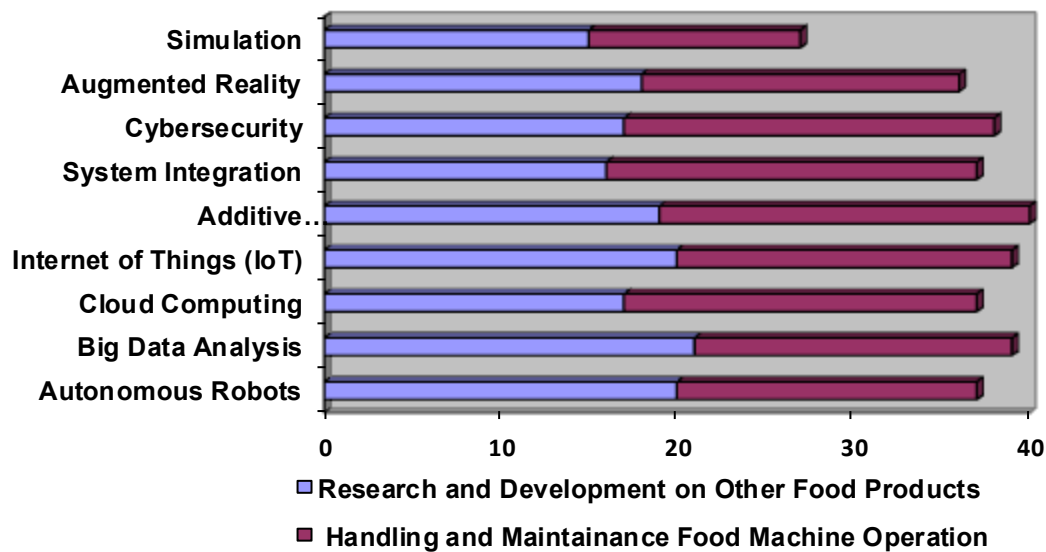


Figure 4.7: The 9 technology drives in relation to the group 107

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	Ability to process and analyze data and information obtained from	Inter-disciplinary & generic knowledge about technology	- Adaptability & ability to change - Decision making - Working in team - Communication skills

PREREQUISITE & SKILLS	KNOWLEDGE ABOUT ICT	ABILITY TO WORK WITH DATA	TECHNICAL KNOW-HOW	PERSONAL SKILLS
	with computers and smart machines like robots, tablets etc. ▪ Understanding machine to machine communication, IT security & data protection	machines ▪ Understanding visual data output & making decisions ▪ Basic statistical knowledge	▪ Specialized knowledge about manufacturing activities and processes in place ▪ Technical know-how of machines to carry out maintenance related activities	▪ Mindset change for lifelong learning

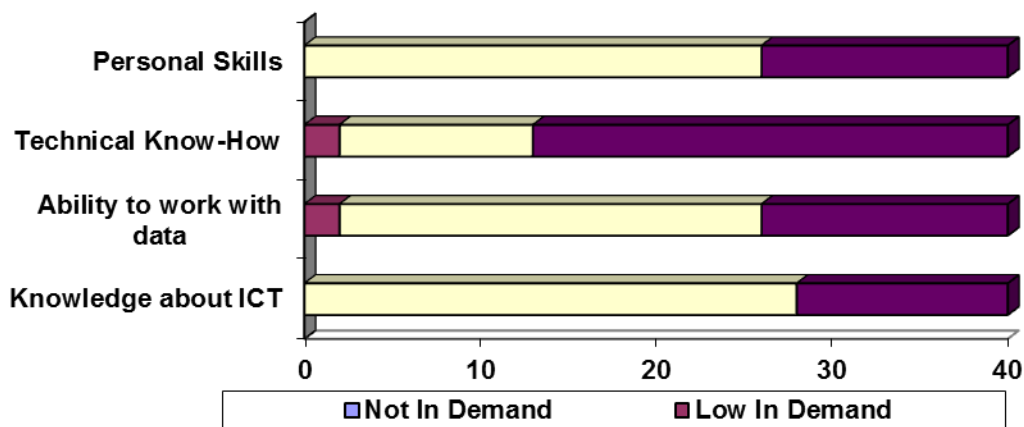


Figure 4.8: Required skills for IR 4.0 for group 107

In order to survive in the era of IR 4.0, the respondents unanimously ranked personal skills and technical know how as the most important required skills for IR 4.0.

4.2.3 Section 4: Related Issues

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



Figure 4.9: List of key issues related to the food industry

4.2.4 Section 5: Respondents

The total actual respondents for answering the questionnaire about 33 from 40 respondents. On this section, shows each job level for who answer for the questionnaire that have been distributed and simplify into data to representative professional person from each food industry sites. From the data, shows the person who are answering the questionnaire are mostly from level 5 which are skilled person and knowledge about food industry. There are no respondents below than level 4.

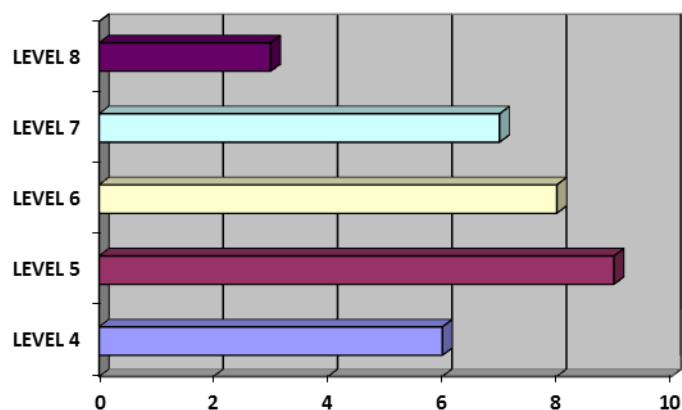


Figure 4.10: List of Actual Respondents based on Job Level

4.3 Occupational Structure (OS)

Table 4.2: Group 107 Occupational Structure (1 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (BAKERY)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager* **	Senior QA Manager	Senior QA Manager
LEVEL 5	Bakery Specialist* **	Product Development Manager*	Production Manager/ Chief Baker* **	QA Manager	QA Manager
LEVEL 4	Food Technologist **	Product Development Executive	Production Executive* **	QA/QC Executive*	Halal Executive*
LEVEL 3	Assistant Food Technologist **	Assistant Executive	Production Supervisor* **	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	Production Senior Operator* **	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator* **	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.3: Group 107 Occupational Structure (2 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (SUGAR)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager* **	Senior QA Manager	Senior QA Manager
LEVEL 5	Sugar Specialist* **	Product Development Manager*	Production Manager* **	QA Manager	QA Manager
LEVEL 4	Food Technologist **	Product Development Executive	Production Executive* **	QA/QC Executive*	Halal Executive*
LEVEL 3	Assistant Food Technologist **	Assistant Executive	Production Supervisor* **	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	Production Senior Operator* **	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator* **	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.4: Group 107 Occupational Structure (3 of 6)

SECTION	(C) MANUFACTURING						
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS						
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (COCOA, CHOCOLATE AND SUGAR CONFECTIONARY)						
AREA	Product Development	Product Development	Chocolate Processing		Cocoa Processing	Quality Assurance (QA)	Quality Assurance (QA)
			Home-Based	Chocolate Manufacturing			
LEVEL 8	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
LEVEL 6	Senior Product Development Manager	Senior Manager	Not Available	Senior Production Manager **	Not Available	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist* **	Product Development Manager*	Manager	Production Manager **	Senior QA Manager	QA Manager	QA Manager
LEVEL 4	Food Technologist **	Product Development Executive	Senior Chocolatier*	Senior Chocolatier/Production Executive* **	Production Executive* **	QA/QC Executive*	Halal Executive*
LEVEL 3	Assistant Food Technologist **	Assistant Executive	Chocolatier	Chocolatier/ Production Supervisor* **	Production Supervisor **	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	Junior Chocolatier	Junior Chocolatier* **	Production Operator* **	QC Operator	QC Operator
LEVEL 1	No Level	No Level	No Level	No Level	No Level	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.5: Group 107 Occupational Structure (4 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (MACARONI, NOODLES, COUSCOUS & SIMILAR FARINACEOUS)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager* **	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist* **	Product Development Manager*	Production Manager* **	QA Manager	QA Manager
LEVEL 4	Food Technologist **	Product Development Executive	Production Executive* **	QA/QC Executive*	QA/QC Executive*
LEVEL 3	Assistant Food Technologist **	Assistant Executive	Production Supervisor* **	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	Production Senior Operator* **	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator* **	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.6: Group 107 Occupational Structure (5 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (PREPARED MEALS AND DISHES)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager* **	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist* **	Product Development Manager*	Production Manager* **	QA Manager	QA Manager
LEVEL 4	Food Technologist **	Product Development Executive	Production Executive* **	QA/QC Executive*	Halal Executive*
LEVEL 3	Assistant Food Technologist **	Assistant Executive	Production Supervisor* **	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	Production Senior Operator* **	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator* **	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.7: Group 107 Occupational Structure (6 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (OTHER FOOD PRODUCTS N.E.C)				
AREA	Product Development	Product Development	Production Department	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager* **	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist* **	Product Development Manager*	Production Manager* **	QA Manager	QA Manager
LEVEL 4	Food Technologist **	Product Development Executive	Production Executive* **	QA/QC Executive*	Halal Executive*
LEVEL 3	Assistant Food Technologist **	Assistant Executive	Production Supervisor* **	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	Production Senior Operator* **	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator* **	No Level	No Level

Note: *Critical Job Titles

**Jobs relevant to IR 4.0

Table 4.8: Summary of Job Titles

No	Sub-sector	Job/Sub-Area		Level								Total Identified Job Titles
				1	2	3	4	5	6	7	8	
1	Manufacture of Bakery	Product Development		NL	NL	2	2	2	2	N/A	N/A	8
		Production Department		1	1	1	1	1	1	N/A	N/A	6
		Quality Assurance		NL	1	1	2	1	1	N/A	N/A	6
2	Manufacture of Sugars	Product Development		NL	NL	2	2	2	2	N/A	N/A	8
		Production Department		1	1	1	1	1	1	N/A	N/A	6
		Quality Assurance		NL	1	1	2	1	1	N/A	N/A	6
3	Manufacture of Cocoa, Chocolate and Sugar Confectionary	Product Development		NL	NL	2	2	2	2	N/A	N/A	8
		Chocolate Processing	Home-Based	NL	1	1	1	1	N/A	N/A	N/A	4
			Chocolate Manufacturing	NL	1	1	1	1	1	N/A	N/A	5
		Cocoa Processing		NL	1	1	1	1	1	N/A	N/A	5
		Quality Assurance		NL	1	1	2	1	1	N/A	N/A	6
4	Manufacture of Macaroni, Noodles, Couscous & similar Farinaceous Products	Product Development		NL	NL	2	2	2	2	N/A	N/A	8
		Production Department		1	1	1	1	1	1	N/A	N/A	6
		Quality Assurance		NL	1	1	2	1	1	N/A	N/A	6
5	Manufacture of Prepared Meals and Dishes	Product Development		NL	NL	2	2	2	2	N/A	N/A	8
		Production Department		1	1	1	1	1	1	N/A	N/A	6
		Quality Assurance		NL	1	1	2	1	1	N/A	N/A	6
6	Manufacture of Other Food Products n.e.c	Product Development		NL	NL	2	2	2	2	N/A	N/A	8
		Production Department		1	1	1	1	1	1	N/A	N/A	6
		Quality Assurance		NL	1	1	2	1	1	N/A	N/A	6
Grand Total of Identified Job Titles												128

NL - No Level

N/A - Not Available

4.4 Table of Job Responsibilities Vs NOSS Level (Area Description)

Section : (C) Manufacturing

Division : (10) Manufacture of Food Products

Group : (107) Manufacture of Other Food Products (Bakery)

Table 4.9: List of Responsibilities for Group 107 according to NOSS Leveling (1 of 13)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior Product Development Manager</u> 1) Leading strategy and development for new and improved bakery products, from concept to commercialization 2) Leading R&D programs updates and process changes to ensure continuous improvement 3) Managing level team members to execute against project timelines for pipeline activities 4) Managing level team members to execute against project timelines for pipeline activities 5) Ownership of multiple bakery product development areas, such as formulation, optimization, and brand maintenance.	<u>Senior Manager</u> 1) Leads and directs members of the bakery organization across various initiatives and projects related to several select bakery products. 2) Manage and creative in development to strategic planning and implementation. 3) Set specific goals for projects	<u>Senior Production Manager</u> 1) Lead the bakery production processes 2) Lead in planning production schedule 3) Ensure bakery production is cost effective 4) Decide what resources are required 5) Perform the selection and maintenance of equipment 6) Lead in Monitor bakery product standard and implement quality control program 7) Liaising with different department

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 5	<u>Bakery Specialist</u> 1) Create idea for bakery formulations. 2) Testing the bakery formulations. 3) Develop and identify test method. 4) Determine, implement & monitor research and development strategies 5) Develop and implement research project 6) Lead and coordinate research project. 7) Monitor the cost and effectiveness of the research. 8) Provide advices to organization.	<u>Product Development Manager</u> 1) Identifying potential bakery products 2) Planning market research of bakery products 3) Generating bakery product requirements 4) Determining specifications of bakery products 5) Production time table and pricing 6) Planning time-integrated for bakery product 7) Developing marketing strategies	<u>Production Manager/Chief Baker</u> 1) Assist in bakery production processes 2) Assist in planning production schedule 3) Ensure bakery production is cost effective 4) Estimate cost and set the quality standard of bakery products 5) Responsible for the selection and maintenance of equipment 6) Assist in monitor bakery product standard and implement quality control program 7) Liaising with different department 8) Assist in Review staff's performance
Level 4	<u>Food Technologist</u> 1) Develop bakery products formulation 2) Planning, execute and evaluate research projects. 3) Analyse research data	<u>Product Development Executive</u> 1) Conduct and evaluate market research 2) Prepare bakery product requirement and specifications report 3) Liaising with suppliers, production, authority bodies	<u>Production Executive</u> 1) Perform Food Batch Maker 2) Perform to set up equipment 3) Follow recipe to produce bakery products 4) Troubleshoot bakery production issues (bakery product formulations, quality, food machine breakdown, etc)
Level 3	<u>Assistant Food Technologist</u> 1) Conduct testing (microbe test, stability test, quality test, etc.) 2) Collect data 3) Prepare data summary reports 4) Prepare food materials 5) Prepare equipment and calibration 6) Submit food samples for testing /	<u>Assistant Executive</u> 1) Generate reports of bakery products 2) Liaising with suppliers, production and authority bodies 3) Carry out preparation for market research (logistic, materials, contact person, etc.)	<u>Production Supervisor</u> 1) Observe gauges and thermometer to determine if mixing chamber temperature is within specified limit 2) Record production and test data for each bakery product test (test result & time cycle) 3) Determine food grading in bakery

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
	collect result reports.		production 4) Supervise workers performance. 5) Testing bakery product during production (taste, visual inspections, feel, etc.) 6) Determine mixing sequence
Level 2	NO LEVEL	NO LEVEL	<u>Production Senior Operator</u> 1) General understanding of food machine operator 2) Perform required testing to ensure bakery products conforms to quality standards 3) Operate equipment (Food cooking machine operator) 4) Perform equipment shutdown 5) Manipulate bakery product ingredients by hand or using machine
Level 1	NO LEVEL	NO LEVEL	<u>Production Operator</u> 1) General understanding food machine operator of bakery products 2) Assist in perform required testing to ensure bakery products conforms to quality standards 3) Assist in operate equipment (Food cooking machine operator) 4) Perform equipment shutdown

Table 4.10: List of Responsibilities for Group 107 according to NOSS Leveling (2 of 13)

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both national and international level	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both national and international level
Level 5	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensuring manufacturing processes comply with act, standards, and regulation at both national and international level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensuring manufacturing processes comply with act, standards, and regulation at both national and international level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality
Level 4	<u>QA/QC Executive</u> 1) Planning for GMP, HACCP, ISO and etc certification. 2) Ensure the implementation of quality standard 3) Execute internal audit 4) Coordinate and prepare for external audit 5) Check and review end product and supply to meet the quality standards	<u>Halal Executive</u> 1) Planning for halal certification. 2) Ensure the implementation of halal assurance 3) Lead internal halal audit 4) Check halal certified supplies

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
	6) Review quality report	
Level 3	<u>QC Assistant</u> 1) Inspector for bakery products 2) Tester for bakery products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure bakery product quality 5) Prepare quality reports	<u>QC Assistant</u> 1) Inspector for bakery products 2) Tester for bakery products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure bakery product quality 5) Prepare quality reports
Level 2	<u>QC Operator</u> 1) Sampler of bakery products 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data	<u>QC Operator</u> 1) Sampler of bakery products 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data
Level 1	NO LEVEL	NO LEVEL

Section : (C) Manufacturing
Division : (10) Manufacture of Food Products
Group : (107) Manufacture of Other Food Products (Sugar)

Table 4.11: List of Responsibilities for Group 107 according to NOSS Leveling (3 of 13)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior Product Development Manager</u> 1) Leading strategy and development for new and improved sugar products from concept to commercialization 2) Leading R&D programs updates and process changes to ensure continuous improvement 3) Managing level team members to execute against project timelines for pipeline activities 4) Managing level team members to execute against project timelines for pipeline activities 5) Ownership of multiple sugar product development areas, such as formulation, optimization, and brand maintenance	<u>Senior Manager</u> 1) Leads and directs members of the food organization across various initiatives and projects related to several select sugar products. 2) Manage and creative in development to strategic planning and implementation 3) Managing and driving complex projects	<u>Senior Production Manager</u> 1) Lead the sugar production processes 2) Lead in planning sugar production schedule 3) Ensure sugar production is cost effective 4) Decide what resources are required 5) Responsible for the selection and maintenance of equipment 6) Lead in monitor sugar product standard and implement quality control program 7) Liaising with different department 8) Lead in review staff's performance
Level 5	<u>Sugar Specialist</u> 1) Create idea for sugar formulations. 2) Test the created sugar formulations. 3) Develop and identify test method. 4) Determine, implement & monitor research	<u>Product Development Manager</u> 1) Identifying potential sugar product 2) Plan market research of sugar products 3) Generating sugar product requirement 4) Determining specifications of sugar	<u>Production Manager</u> 1) Assist in sugar production processes 2) Assist in planning production schedule

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
	and development strategies. 5) Develop and implement research project. 6) Lead and coordinate research project. 7) Monitor the cost and effectiveness of the research. 8) Provide advices to organization. 9) Ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learnings, trainings, workshops, events, meetings). 10) Keep up to date with the latest developments in academia and sugar industry	products 5) Provide production time table and pricing 6) Time-integrated plans for sugar product 7) Developing marketing strategies 8) Manages and coordinates sugar product development projects. 9) Evaluates and resolves technical feasibility, design optimization, and sugar production issues 10) Ensure that labelling and marketing/ promotion literature match sugar product specifications	3) Ensure sugar production is cost effective 4) Estimate cost and set the quality standard of sugar products 5) Perform the selection and maintenance of equipment 6) Assist in monitor sugar product standard and implement quality control program 7) Liaising with different department 8) Assist in Review staff's performance
Level 4	<u>Food Technologist</u> 1) Develop sugar products formulation 2) Planning, execute and evaluate research projects. 3) Analyse research data	<u>Product Development Executive</u> 1) Conduct and evaluate market research 2) Prepare sugar product requirement and specifications reports 3) Liaising with suppliers, production, authority bodies	<u>Production Executive</u> 1) Perform Food Batch Maker 2) Perform to set up food equipment 3) Follow recipe to produce sugar products 4) Troubleshoot sugar production issues (sugar products formulations, quality, food machine breakdown, etc)
Level 3	<u>Assistant Food Technologist</u> 1) Conduct testing (microbe test, stability test, quality test, etc.) 2) Collect data 3) Prepare data summary report 4) Prepare food materials 5) Prepare equipment and calibration 6) Submit food samples for testing / collect	<u>Assistant Executive</u> 1) Generate reports 2) Liaising with suppliers, production, authority bodies 3) Carry out preparation for market research (logistic, materials, contact person, etc.)	<u>Production Supervisor</u> 1) Observe gauges and thermometer to determine if mixing chamber temperature is within specified limit 2) Record food production and test data for each sugar product test (test result & time cycle) 3) Determine food grading in sugar

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
	result reports		production 4) Supervise workers performance. 5) Test sugar product during production (taste, visual inspections, feel, etc.) 6) Determine mixing sequence
Level 2	NO LEVEL	NO LEVEL	<u>Production Senior Operator</u> 1) Operate equipment (Food cooking machine operator) 2) Perform equipment shutdown 3) Manipulate sugar product ingredients by hand or using food machine 4) General understanding food machine operator of sugar products 5) Assist in perform required testing to ensure sugar products conforms to quality standards
Level 1	NO LEVEL	NO LEVEL	<u>Production Operator</u> 1) General understanding machine operator of sugar products 2) Assist in perform required testing to ensure sugar products conforms to quality standards 3) Assist in operate equipment (Food cooking machine operator) 4) Perform equipment shutdown

Table 4.12: List of Responsibilities for Group 107 according to NOSS Leveling (4 of 13)

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both national and international level	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both national and international level
Level 5	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality
Level 4	<u>QA/QC Executive</u> 1) Planning for GMP, HACCP, ISO and etc certification. 2) Ensure the implementation of quality standard 3) Execute internal audit 4) Coordinate and prepare for external audit 5) Check and review end product and supply to meet the quality standards 6) Review quality report	<u>Halal Executive</u> 1) Planning for halal certification. 2) Ensure the implementation of halal assurance 3) Lead internal halal audit 4) Check halal certified supplies

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 3	<u>QC Assistant</u> 1) Inspector for sugar products 2) Tester for sugar products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure sugar product quality 5) Prepare quality reports	<u>QC Assistant</u> 1) Inspector for sugar products 2) Tester for sugar products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure sugar product quality 5) Prepare quality reports
Level 2	<u>QC Operator</u> 1) Sampler of sugar products 2) Collect food samples 3) Prepare sample for testing 4) Prepare equipment for testing 5) Collect and prepare data	<u>QC Operator</u> 1) Sampler of sugar products 2) Collect food samples 3) Prepare sample for testing 4) Prepare equipment for testing 5) Collect and prepare data
Level 1	NO LEVEL	NO LEVEL

Section : (C) Manufacturing
Division : (10) Manufacture of Food Products
Group : (107) Manufacture of Other Food Products (Cocoa, Chocolate and Sugar Confectionary)

Table 4.13: List of Responsibilities for Group 107 according to NOSS Leveling (5 of 13)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior Product Development Manager</u> 1) Leading strategy and development for new and improved bakery products, from concept to commercialization 2) Leading R&D programs updates and process changes to ensure continuous improvement 3) Managing level team members to execute against project timelines for pipeline activities 4) Managing level team members to execute against project timelines for pipeline activities 5) Ownership of multiple bakery product development areas, such as formulation, optimization, and brand maintenance.	<u>Senior Manager</u> 1) Leads and directs members of the chocolate organization across various initiatives and projects related to several select bakery products. 2) Manage and creative in development to strategic planning and implementation. 3) Set specific goals for projects
Level 5	<u>Bakery Specialist</u> 1) Create idea for chocolate formulations. 2) Testing the chocolate formulations. 3) Develop and identify test method. 4) Determine, implement & monitor research and development strategies 5) Develop and implement research project 6) Lead and coordinate research project. 7) Monitor the cost and effectiveness of the research. 8) Provide advices to organization.	<u>Product Development Manager</u> 1) Identifying potential chocolate products 2) Planning market research of chocolate products 3) Generating bakery product requirements 4) Determining specifications of bakery products 5) Production time table and pricing 6) Planning time-integrated for bakery product 7) Developing marketing strategies

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes
Level 4	<u>Food Technologist</u> 1) Develop bakery products formulation 2) Planning, chocolate and evaluate research projects. 3) Analyse research data	<u>Product Development Executive</u> 1) Conduct and evaluate market research 2) Prepare chocolate product requirement and specifications report 3) Liaising with suppliers, production, authority bodies
Level 3	<u>Assistant Food Technologist</u> 1) Conduct testing (microbe test, stability test, quality test, etc.) 2) Collect data 3) Prepare data summary reports 4) Prepare food materials 5) Prepare equipment and calibration 6) Submit food samples for testing / collect result reports.	<u>Assistant Executive</u> 1) Generate reports of chocolate products 2) Liaising with suppliers, production and authority bodies 3) Carry out preparation for market research (logistic, materials, contact person, etc.)
Level 2	NO LEVEL	NO LEVEL
Level 1	NO LEVEL	NO LEVEL

Table 4.14: List of Responsibilities for Group 107 according to NOSS Leveling (6 of 13)

AREA	CHOCOLATE MANUFACTURE	CHOCOLATE MANUFACTURE	COCOA MANUFACTURE
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	CHOCOLATE PROCESSING (HOME-BASED)	CHOCOLATE PROCESSING (CHOCOLATE MANUFACTURING)	COCOA PROCESSING
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	<u>Senior Production Manager</u> 1) Lead in planning and organising chocolate production schedules 2) Lead in organising the repair of chocolate production equipment 3) Lead in organising the routine maintenance of chocolate production equipment 4) Liaising with different department 5) Lead in Review staff's performance	<u>Senior Production Manager</u> 1) Overseeing cocoa product development initiatives for the organization 2) Lead in planning and organising cocoa production schedules 3) Lead in organising the repair of cocoa production equipment 4) Lead in provide the highest level of internal and external customer service. 5) Perform customer needs analyses of the mortgage industry and competitive assessments of the mortgage insurance industry employing the find more, win more and keep more methodologies 6) Working autonomously to formulate cocoa products that are aligned with specific mission to deliver cocoa products of outstanding quality & taste made from sustainable sourced ingredients that consumers value. 7) Lead in managing and driving complex projects

AREA	CHOCOLATE MANUFACTURE	CHOCOLATE MANUFACTURE	COCOA MANUFACTURE
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	CHOCOLATE PROCESSING (HOME-BASED)	CHOCOLATE PROCESSING (CHOCOLATE MANUFACTURING)	COCOA PROCESSING
Level 5	<u>Manager</u> 1) Developing plans and executing projects for manual chocolate processing 2) Support both the short and long-term marketing strategy of manual chocolate processing. 3) Collaborate cross-functionally to ensure the chocolate product remains relevant to consumers 4) Drives profitable corporate growth and that all activities support the chocolate product equity. 5) Lead in managing vendor and agency partners and all aspects in the projects 6) Responsible for managing an assigned portfolio to include rationalization, mix strategies and profit optimization. 7) Evaluate chocolate product portfolio and the marketplace and make recommendations for new chocolate product launches and chocolate product improvements	<u>Production Manager</u> 1) Planning and organising chocolate production schedules 2) Organising the repair of chocolate production equipment 3) Organising the routine maintenance of chocolate production equipment 4) Liaising with different department 5) Lead in Review staff's performance	<u>Production Manager</u> 1) Assist in planning and organising cocoa production schedules 2) Assist in organising the repair of cocoa production equipment. 3) Organising the routine maintenance of cocoa production equipment 4) Assist in managing and driving complex projects 5) Assist in provide the highest level of internal and external customer service.

AREA	CHOCOLATE MANUFACTURE Responsibilities May Includes	CHOCOLATE MANUFACTURE Responsibilities May Includes	COCOA MANUFACTURE Responsibilities May Includes
	CHOCOLATE PROCESSING (HOME-BASED)	CHOCOLATE PROCESSING (CHOCOLATE MANUFACTURING)	COCOA PROCESSING
Level 4	<u>Senior Chocolatier</u> 1) Lead to perform chocolate tempering 2) Lead to perform chocolate moulding 3) Lead to perform chocolate centre making 4) Lead to create decoration of chocolate	<u>Senior Chocolatier/ Production Executive</u> 1) Lead to perform chocolate tempering 2) Lead to perform chocolate moulding 3) Lead to perform chocolate centre making 4) Lead to create decoration of chocolate 5) Lead to monitor production process of chocolate 6) Prepare and develop formulation of chocolate	<u>Production Executive</u> 1) Handling Food Batch Maker of cocoa products 2) Managing and improving cocoa production processes to enhance product quality and maximize efficiency 3) Production planning, control and scheduling 4) Overseas, direct and lead cocoa manufacturing operation of cocoa processing 5) Coordinate cocoa production staff and equipment 6) Ensure the quality and profitability of cocoa products 7) Produce production report and other related performance report to the superior as required
Level 3	<u>Chocolatier</u> 1) Perform chocolate tempering 2) Perform chocolate moulding 3) Perform chocolate centre making 4) Create decoration of chocolate	<u>Chocolatier/Production Supervisor</u> 1) Perform chocolate tempering 2) Perform chocolate moulding 3) Perform chocolate centre making 4) Create decoration of chocolate 5) Monitor production process of chocolate	<u>Production Supervisor</u> 1) Identifying problems or bottlenecks in the cocoa production processes 2) Directly supervising hourly cocoa production 3) Tracking staff absenteeism and time-keeping 4) Ensuring the safest working environment possible for staff

AREA	CHOCOLATE MANUFACTURE Responsibilities May Includes	CHOCOLATE MANUFACTURE Responsibilities May Includes	COCOA MANUFACTURE Responsibilities May Includes
	CHOCOLATE PROCESSING (HOME-BASED)	CHOCOLATE PROCESSING (CHOCOLATE MANUFACTURING)	COCOA PROCESSING
			5) Planning, assigning, and directing production work 6) Appraising staff performance 7) Rewarding or disciplining employees 8) Periodically carrying out office work 9) Addressing employee complaints and resolving any problems 10) Actively working to eliminate hazards that may cause injury 11) Organizing and prioritizing production needs 12) Carrying out accident investigations 13) Making sure that cocoa products are to the highest grade and production standards 14) Creating an environment that is conducive to teamwork.
Level 2	<u>Junior Chocolatier</u> 1) Prepare raw materials of chocolate 2) Prepare equipment and techniques (Melter, oven and tempering machine) 3) Perform chocolate melting 4) Perform packing for chocolate products	<u>Junior Chocolatier</u> 1) Prepare raw materials 2) Prepare equipment and techniques (Melter, oven, tempering machine, presser, tempering, moulding, packer, weigher, mixing, refining, conching and filling machine operator). 3) Perform chocolate melting 4) Perform packing for chocolate products	<u>Production Operator</u> 1) Prepare ingredients for cocoa production requirement 2) Setting up machines for cocoa production 3) Perform cocoa ingredient mixing process 4) Perform cocoa refining process 5) Perform cocoa conching process 6) Perform cocoa tempering process 7) Perform cocoa moulding process

AREA	CHOCOLATE MANUFACTURE Responsibilities May Includes	CHOCOLATE MANUFACTURE Responsibilities May Includes	COCOA MANUFACTURE Responsibilities May Includes
	CHOCOLATE PROCESSING (HOME-BASED)	CHOCOLATE PROCESSING (CHOCOLATE MANUFACTURING)	COCOA PROCESSING
			8) Perform packing and storing of cocoa products
Level 1	NO LEVEL	NO LEVEL	NO LEVEL

Table 4.15: List of Responsibilities for Group 107 according to NOSS Leveling (7 of 13)

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both national and international level	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both national and international level
Level 5	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality
Level 4	<u>QA/QC Executive</u> 1) Planning for GMP, HACCP, ISO and etc certification. 2) Ensure the implementation of quality standard 3) Execute internal audit 4) Coordinate and prepare for external audit 5) Check and review end product and supply to meet the quality standards	<u>Halal Executive</u> 1) Planning for halal certification. 2) Ensure the implementation of halal assurance 3) Lead internal halal audit 4) Check halal certified supplies

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
	6) Review quality report	
Level 3	<u>QC Assistant</u> 1) Inspector for food products 2) Tester for food products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure food product quality 5) Prepare quality reports	<u>QC Assistant</u> 1) Inspector for food products 2) Tester for food products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure food product quality 5) Prepare quality reports
Level 2	<u>QC Operator</u> 1) Sampler of food products 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data	<u>QC Operator</u> 1) Sampler of food products 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data
Level 1	NO LEVEL	NO LEVEL

Section : (C) Manufacturing
Division : (10) Manufacture of Food Products
Group : (107) Manufacture of Other Food Products (Macaroni, Noodles, Couscous & Similar Farinaceous)

Table 4.16: List of Responsibilities for Group 107 according to NOSS Leveling (8 of 13)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior Product Development Manager</u> 1) Leading strategy and development for new and improved farinaceous products, from concept to commercialization 2) Leading R&D programs updates and process changes to ensure continuous improvement 3) Managing level team members to execute against project timelines for pipeline activities 4) Managing level team members to execute against project timelines for pipeline activities 5) Ownership of multiple farinaceous product development areas, such as formulation, optimization, and brand maintenance	<u>Senior Manager</u> 1) Leads and directs members of the farinaceous organization across various initiatives and projects related to several select farinaceous products. 2) Manage and creative in development to strategic planning and implementation 3) Managing and driving complex projects	<u>Senior Production Manager</u> 1) Lead the farinaceous production processes 2) Lead in planning production schedule 3) Ensure farinaceous production is cost effective 4) Decide what resources are required 5) Responsible for the selection and maintenance of equipment 6) Lead in monitor farinaceous product standard and implement quality control program 7) Liaising with different department 8) Lead in review staff's performance

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 5	<u>Food Specialist</u> 1) Create idea for farinaceous products formulations. 2) Test the created farinaceous products formulations. 3) Develop and identify test method. 4) Determine, implement & monitor research and development strategies. 5) Develop and implement research project. 6) Lead and coordinate research project. 7) Monitor the cost and effectiveness of the research. 8) Provide advices to organization. 9) Ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learning, trainings, workshops, events, meetings).	<u>Product Development Manager</u> 1) Identifying potential farinaceous product 2) Plan market research of farinaceous products 3) Generating farinaceous product requirement 4) Determining specifications of farinaceous products 5) Perform production time table and pricing 6) Perform time-integrated plans for farinaceous product 7) Developing marketing strategies 8) Manages and coordinates farinaceous products product development projects. 9) Evaluates and resolves technical feasibility, design optimization, and farinaceous production issues 10) Ensure that labelling and marketing/promotion literature match farinaceous product specifications	<u>Production Manager</u> 1) Assist in farinaceous production processes 2) Assist in planning production schedule 3) Ensure farinaceous production is cost effective 4) Estimate cost and set the quality standard of farinaceous products 5) Responsible for the selection and maintenance of equipment 6) Assist in monitor farinaceous product standard and implement quality control program 7) Liaising with different department 8) Assist in review staff's performance
Level 4	<u>Food Technologist</u> 1) Develop farinaceous products formulation 2) Planning, execute and evaluate research projects 3) Analyse research data	<u>Product Development Executive</u> 1) Conduct and evaluate market research 2) Prepare farinaceous product requirement and specifications report 3) Liaising with suppliers, production, authority bodies	<u>Production Executive</u> 1) Handling Food Batch Maker 2) Responsible to set up equipment 3) Follow recipe to produce farinaceous products 4) Troubleshoot food production issues (farinaceous product formulations, quality, machine breakdown, etc)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 3	<u>Assistant Food Technologist</u> 1) Conduct testing (microbe test, stability test, quality test, etc.) 2) Collect data 3) Prepare data summary report 4) Prepare food materials 5) Prepare equipment and calibration 6) Submit food samples for testing / collect result report	<u>Assistant Executive</u> 1) Generate reports 2) Liaising with suppliers, food production and authority bodies 3) Carry out preparation for market research (logistic, materials, contact person, etc.)	<u>Production Supervisor</u> 1) Observe gauges and thermometer to determine if mixing chamber temperature is within specified limit 2) Record food production and test data for each farinaceous product test (test result & time cycle) 3) Food grading in farinaceous production 4) Supervise workers performance. 5) Test farinaceous product during production (taste, visual inspections, feel, etc.)
Level 2	NO LEVEL	NO LEVEL	<u>Production Senior Operator</u> 1) Operate equipment (Food cooking machine operator) 2) Perform equipment shutdown 3) Manipulate farinaceous product ingredients by hand or using food machine 4) General understanding machine operator of farinaceous products 5) Assist in perform required testing to ensure farinaceous products conforms to quality standards
Level 1	NO LEVEL	NO LEVEL	<u>Production Operator</u> 1) General understanding machine operator of farinaceous products 2) Assist in perform required testing to ensure farinaceous products conforms to quality standards 3) Assist in operate equipment (Food cooking machine operator)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
			4) Perform equipment shutdown

Table 4.17: List of Responsibilities for Group 107 according to NOSS Leveling (9 of 13)

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both National and International level	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both National and International level
Level 5	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality
Level 4	<u>QA/QC Executive</u> 1) Planning for GMP, HACCP, ISO and etc certification. 2) Ensure the implementation of quality standard 3) Execute internal audit 4) Coordinate and prepare for external audit 5) Check and review end product and supply to meet the	<u>Halal Executive</u> 1) Planning for halal certification 2) Ensure the implementation of halal assurance 3) Lead internal halal audit 4) Check halal certified supplies

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
	quality standards 6) Review quality reports	
Level 3	<u>QC Assistant</u> 1) Inspector for farinaceous products 2) Tester for farinaceous products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure farinaceous product quality 5) Prepare quality reports	<u>QC Assistant</u> 1) Inspector for farinaceous products 2) Tester for farinaceous products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure farinaceous product quality 5) Prepare quality reports
Level 2	<u>QC Operator</u> 1) Sampler of farinaceous products 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data	<u>QC Operator</u> 1) Sampler of farinaceous products 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data
Level 1	NO LEVEL	NO LEVEL

Section : (C) Manufacturing
 Division : (10) Manufacture of Food Products
 Group : (107) Manufacture of Other Food Products (Prepared Meals and Dishes)

Table 4.18: List of Responsibilities for Group 107 according to NOSS Leveling (10 of 13)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior Product Development Manager</u> 1) Leading strategy and development for new and improved prepared meals and dishes products from concept to commercialization 2) Leading R&D programs updates and process changes to ensure continuous improvement 3) Managing level team members to execute against project timelines for pipeline activities 4) Managing level team members to execute against project timelines for pipeline activities 5) Ownership of multiple prepared meals and dishes product development areas, such as formulation, optimization, and brand maintenance	<u>Senior Manager</u> 1) Leads and directs members of the prepared meals and dishes organization across various initiatives and projects related to several select prepared meals and dishes products. 2) Manage and creative in development to strategic planning and implementation 3) Managing and driving complex projects	<u>Senior Production Manager</u> 1) Lead the prepared meals and dishes production processes 2) Lead in food planning production schedule 3) Ensure prepared meals and dishes production is cost effective 4) Decide what resources are required 5) Responsible for the selection and maintenance of equipment 6) Lead in monitor prepared meals and dishes product standard and implement quality control program 7) Liaising with different department 8) Lead in review staff's performance

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 5	<u>Food Specialist</u> 1) Create idea for prepared meals and dishes formulations. 2) Test the created prepared meals and dishes formulations. 3) Develop and identify test method. 4) Determine, implement & monitor research and development strategies. 5) Develop and implement research project. 6) Lead and coordinate research project. 7) Monitor the cost and effectiveness of the research. 8) Provide advices to organization. 9) Ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learnings, trainings, workshops, events, meetings). 10) Keep up to date with the latest developments in academia and food industry	<u>Product Development Manager</u> 1) Identifying potential prepared meals and dishes product 2) Plan market research of prepared meals and dishes products 3) Generating prepared meals and dishes product requirement 4) Determining specifications o prepared meals and dishes products 5) Perform production time table and pricing 6) Perform time-integrated plans for prepared meals and dishes product 7) Developing marketing strategies 8) Manages and coordinates prepared meals and dishes product development projects. 9) Evaluates and resolves technical feasibility, design optimization, and prepared meals and dishes production issues	<u>Production Manager</u> 1) Assist in prepared meals and dishes production processes 2) Assist in planning production schedule 3) Ensure prepared meals and dishes production is cost effective 4) Estimate cost and set the quality standard of prepared meals and dishes products 5) Responsible for the selection and maintenance of equipment 6) Assist in monitor prepared meals and dishes product standard and implement quality control program 7) Liaising with different department 8) Assist in review staff's performance
Level 4	<u>Food Technologist</u> 1) Develop prepared meals and dishes products formulation 2) Planning, execute and evaluate research projects. 3) Analyse research data	<u>Product Development Executive</u> 1) Prepare prepared meals and dishes product requirement and specifications report 2) Liaising with suppliers, production, authority bodies 3) Conduct and evaluate market research	<u>Production Executive</u> 1) Perform Food Batch Maker 2) Perform set up equipment 3) Follow food recipe to produce prepared meals and dishes products 4) Troubleshoot food production issues (product formulations, quality, machine breakdown, etc)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 3	<u>Assistant Food Technologist</u> 1) Conduct testing (microbe test, stability test, quality test, etc.) 2) Collect data 3) Prepare data summary report 4) Prepare materials 5) Prepare equipment, calibration 6) Submit samples for testing / collect result report	<u>Assistant Executive</u> 1) Generate reports 2) Liaising with suppliers, production, authority bodies 3) Carry out preparation for market research (logistic, materials, contact person, etc.)	<u>Production Supervisor</u> 1) Observe gauges and thermometer to determine if mixing chamber temperature is within specified limit 2) Record food production and test data for each prepared meals and dishes product test (test result & time cycle) 3) Perform food grading in prepared meals and dishes production 4) Supervise workers performance. 5) Test prepared meals and dishes product during production (taste, visual inspections, feel, etc.) 6) Determine mixing sequence
Level 2	NO LEVEL	NO LEVEL	<u>Production Senior Operator</u> 1) Operate equipment (Food cooking machine operator) 2) Perform equipment shutdown 3) Manipulate product ingredients by hand or using machine 4) General understanding machine operator of prepared meals and dishes products 5) Assist in perform required testing to ensure prepared meals and dishes product conforms to quality standards
Level 1	NO LEVEL	NO LEVEL	<u>Production Operator</u> 1) General understanding machine operator of prepared meals and dishes products 2) Assist in perform required testing

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
			to ensure prepared meals and dishes products conforms to quality standards 3) Assist in operate equipment (Food cooking machine operator) 4) Perform equipment shutdown

Table 4.19: List of Responsibilities for Group 107 according to NOSS Leveling (11 of 13)

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both National and International level	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both National and International level

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 5	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality
Level 4	<u>QA/QC Executive</u> 1) Planning for GMP, HACCP, ISO and etc certification. 2) Ensure the implementation of quality standard 3) Execute internal audit 4) Coordinate and prepare for external audit 5) Check and review end product and supply to meet the quality standards 6) Review quality reports	<u>Halal Executive</u> 1) Planning for halal certification 2) Ensure the implementation of halal assurance 3) Lead internal halal audit 4) Check halal certified supplies
Level 3	<u>QC Assistant</u> 1) Inspector for prepared meals and dishes products 2) Tester for prepared meals and dishes products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure prepared meals and dishes product quality 5) Prepare quality reports	<u>QC Assistant</u> 1) Inspector for prepared meals and dishes products 2) Tester for prepared meals and dishes products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure prepared meals and dishes product quality 5) Prepare quality reports
Level 2	<u>QC Operator</u> 1) Sampler of prepared meals and dishes products 2) Collect samples 3) Prepare sample for testing 4) Prepare equipment for testing 5) Collect and prepare data	<u>QC Operator</u> 1) Sampler of prepared meals and dishes products 2) Collect samples 3) Prepare sample for testing 4) Prepare equipment for testing 5) Collect and prepare data
Level 1	NO LEVEL	NO LEVEL

Section : (C) Manufacturing
 Division : (10) Manufacture of Food Products
 Group : (107) Manufacture of Other Food Products (Other food products n.e.c.)

Table 4.20: List of Responsibilities for Group 107 according to NOSS Leveling (12 of 13)

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior Product Development Manager</u> 1) Leading strategy and development for new and improved other food products n.e.c, from concept to commercialization 2) Leading R&D programs updates and process changes to ensure continuous improvement 3) Managing level team members to execute against project timelines for pipeline activities 4) Managing level team members to execute against project timelines for pipeline activities 5) Ownership of multiple other food products n.e.c. development areas, such as formulation, optimization, and brand maintenance	<u>Senior Manager</u> 1) Leads and directs members of the other food products n.e.c. organization across various initiatives and projects related to several select other food products n.e.c. 2) Manage and creative in development to strategic planning and implementation 3) Managing and driving complex projects	<u>Senior Production Manager</u> 1) Lead the other food products n.e.c. production processes 2) Lead in planning production schedule 3) Ensure other food products n.e.c. production is cost effective 4) Decide what resources are required 5) Responsible for the selection and maintenance of equipment 6) Lead in monitor other food products n.e.c. standard and implement quality control program 7) Liaising with different department 8) Lead in review staff's performance

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 5	<u>Food Specialist</u> 1) Create idea for other food products n.e.c. formulations. 2) Test the created other food products n.e.c. formulations. 3) Develop and identify test method. 4) Determine, implement & monitor research and development strategies. 5) Develop and implement research project. 6) Lead and coordinate research project. 7) Monitor the cost and effectiveness of the research. 8) Provide advices to organization. 9) Ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learnings, trainings, workshops, events, meetings). 10) Keep up to date with the latest developments in academia and industry	<u>Product Development Manager</u> 1) Identifying potential other food products n.e.c. 2) Plan market research of other food products n.e.c. 3) Generating other food products n.e.c. requirement 4) Determining specifications on other food products n.e.c. 5) Perform production time table and pricing 6) Perform time-integrated plans for other food products n.e.c. 7) Developing marketing strategies 8) Manages and coordinates other food products n.e.c. development projects. 9) Evaluates and resolves technical feasibility, design optimization, and other food products n.e.c. production issues 10) Ensure that labelling and marketing/ promotion literature match other food products n.e.c. specifications	<u>Production Manager</u> 1) Assist in other food products production processes 2) Assist in planning production schedule 3) Ensure other food products production is cost effective 4) Estimate cost and set the quality standard of other food products 5) Responsible for the selection and maintenance of equipment 6) Assist in monitor other food products n.e.c standard and implement quality control program 7) Liaising with different department 8) Assist in Review staff's performance
Level 4	<u>Food Technologist</u> 1) Develop other food products n.e.c. products formulation 2) Planning, execute and evaluate research projects. 3) Analyse research data	<u>Product Development Executive</u> 1) Conduct and evaluate market research 2) Prepare other food products n.e.c. requirement and specifications report 3) Liaising with suppliers, production, authority bodies	<u>Production Executive</u> 1) Perform Food Batch Maker 2) Perform set up equipment 3) Follow recipe to produce other food products n.e.c. 4) Troubleshoot food production issues

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
			(product formulations, quality, machine breakdown, etc)
Level 3	<u>Assistant Food Technologist</u> 1) Conduct testing (microbe test, stability test, quality test, etc.) 2) Collect data 3) Prepare data summary report 4) Prepare materials 5) Prepare equipment, calibration 6) Submit food samples for testing / collect result report	<u>Assistant Executive</u> 1) Generate reports, 2) Liaising with suppliers, production, authority bodies 3) Carry out preparation for market research (logistic, materials, contact person, etc.)	<u>Production Supervisor</u> 1) Observe gauges and thermometer to determine if mixing chamber temperature is within specified limit 2) Record production and test data for each other food products n.e.c. product test (test result & time cycle) 3) Perform food grading in other food products n.e.c. production 4) Supervise workers performance. 5) Test other food products n.e.c. during production (taste, visual inspections, feel, etc.) 6) Determine mixing sequence
Level 2	NO LEVEL	NO LEVEL	<u>Production Senior Operator</u> 1) Operate equipment (Food cooking machine operator) 2) Perform equipment shutdown 3) Manipulate product ingredients by hand or using machine 4) General understanding machine operator of other food products n.e.c. products 5) Assist in perform required testing to ensure other food products n.e.c. conforms to quality standards

AREA	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCT DEVELOPMENT Responsibilities May Includes	PRODUCTION Responsibilities May Includes
Level 1	NO LEVEL	NO LEVEL	<u>Production Operator</u> 1) General understanding machine operator of other food products n.e.c. 2) Assist in perform required testing to ensure other food products n.e.c. conforms to quality standards 3) Assist in operate equipment (Food cooking machine operator) 4) Perform equipment shutdown

Table 4.21: List of Responsibilities for Group 107 according to NOSS Leveling (13 of 13)

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both National and International level	<u>Senior QA Manager</u> 1) Support all aspect of quality throughout the supply chain from ingredient receipt to the food manufacture and distribution of the finished product. 2) Monitor KPIs for QA department such as plant support, staff proficiency, and dependability of results 3) Setting standard for quality and health safety 4) Ensuring food manufacturing processes comply with act, standards, and regulation at both National and International level

AREA	QUALITY ASSURANCE(QA) Responsibilities May Includes	QUALITY ASSURANCE(QA) Responsibilities May Includes
Level 5	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality	<u>QA Manager</u> 1) Assist in setting standard for quality and health safety 2) Assist in ensure food manufacturing processes comply with act, standards, and regulation at both National and International level 3) Determining, negotiating and agree on in-house quality procedure, standard and specifications 4) Determine training needs 5) Change and improvement in performance and quality
Level 4	<u>QA/QC Executive</u> 1) Planning for GMP, HACCP, ISO and etc certification. 2) Ensure the implementation of quality standard 3) Execute internal audit 4) Coordinate and prepare for external audit 5) Check and review end product and supply to meet the quality standards 6) Review quality reports	<u>Halal Executive</u> 1) Planning for halal certification 2) Ensure the implementation of halal assurance 3) Lead internal halal audit 4) Check halal certified supplies
Level 3	<u>QC Assistant</u> 1) Inspector for food products 2) Tester for food products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure other food products n.e.c. quality 5) Prepare quality reports	<u>QC Assistant</u> 1) Inspector for food products 2) Tester for food products 3) Conduct testing (microbe test, quality test, etc.) 4) Ensure other food products n.e.c. quality 5) Prepare quality reports
Level 2	<u>QC Operator</u> 1) Sampler of other food products n.e.c. 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data	<u>QC Operator</u> 1) Sampler of other food products n.e.c. 2) Collect food samples 3) Prepare food sample for testing 4) Prepare equipment for testing 5) Collect and prepare data
Level 1	NO LEVEL	NO LEVEL

4.5 Mapping OS Vs Available NOSS

Table 4.22: OS vs Existing NOSS (1 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (BAKERY)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager	Senior QA Manager	Senior QA Manager
LEVEL 5	HT-013-5:2012	HT-013-5:2012	C107-002-5:2017	QA Manager	QA Manager
LEVEL 4	HT-013-4:2012	HT-013-4:2012	C107-002-4:2017	QA/QC Executive	Halal Executive
LEVEL 3	HT-014-3:2011	HT-014-3:2011	AF-018-3:2014 AF-012-3:2012 C107-001-3:2017	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	AF-012-2:2012	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator	No Level	No Level

Table 4.23: OS vs Existing NOSS (2 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (SUGAR)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager	Senior QA Manager	Senior QA Manager
LEVEL 5	Sugar Specialist	Product Development Manager	C107-002-5:2017	QA Manager	QA Manager
LEVEL 4	Food Technologist	Product Development Executive	C107-002-4:2017	QA/QC Executive	Halal Executive
LEVEL 3	Assistant Food Technologist	Assistant Executive	AF-018-3:2014 AF-012-3:2012 C107-001-3:2017	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	AF-012-2:2012	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator	No Level	No Level

Table 4.24: OS vs Existing NOSS (3 of 6)

SECTION	(C) MANUFACTURING						
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS						
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (COCOA, CHOCOLATE AND SUGAR CONFECTIONARY)						
AREA	Product Development	Product Development	Chocolate Processing		Cocoa Processing	Quality Assurance (QA)	Quality Assurance (QA)
			Home-Based	Chocolate Manufacturing			
LEVEL 8	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
LEVEL 6	Senior Product Development Manager	Senior Manager	Not Available	Senior Production Manager	Not Available	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist	Product Development Manager	Manager	Production Manager	Senior QA Manager	QA Manager	QA Manager
LEVEL 4	Food Technologist	Product Development Executive	Senior Chocolatier	Senior Chocolatier/Production Executive	C107-002-4:2017	QA/QC Executive	Halal Executive
LEVEL 3	Assistant Food Technologist	Assistant Executive	HT-015-3:2013	Chocolatier/ Production Supervisor	AF-018-3:2014 AF-012-3:2012 C107-001-3:2017	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	Junior Chocolatier	Junior Chocolatier	AF-012-2:2012	QC Operator	QC Operator
LEVEL 1	No Level	No Level	No Level	No Level	No Level	No Level	No Level

Table 4.25: OS vs Existing NOSS (4 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (MACARONI, NOODLES, COUSCOUS & SIMILAR FARINACEOUS)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist	Product Development Manager	C107-002-5:2017	QA Manager	QA Manager
LEVEL 4	Food Technologist	Product Development Executive	C107-002-4:2017	QA/QC Executive	QA/QC Executive
LEVEL 3	Assistant Food Technologist	Assistant Executive	AF-018-3:2014 AF-012-3:2012 C107-001-3:2017	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	AF-012-2:2012	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator	No Level	No Level

Table 4.26: OS vs Existing NOSS (5 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (PREPARED MEALS AND DISHES)				
AREA	Product Development	Product Development	Production	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist	Product Development Manager	C107-002-5:2017	QA Manager	QA Manager
LEVEL 4	Food Technologist	Product Development Executive	C107-002-4:2017	QA/QC Executive	Halal Executive
LEVEL 3	Assistant Food Technologist	Assistant Executive	AF-018-3:2014 AF-012-3:2012 C107-001-3:2017	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	AF-012-2:2012	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator	No Level	No Level

Table 4.27: OS vs Existing NOSS (6 of 6)

SECTION	(C) MANUFACTURING				
DIVISION	(10) MANUFACTURE OF FOOD PRODUCTS				
GROUP	(107) MANUFACTURE OF OTHER FOOD PRODUCTS (OTHER FOOD PRODUCTS N.E.C)				
AREA	Product Development	Product Development	Production Department	Quality Assurance (QA)	Quality Assurance (QA)
LEVEL 8	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 7	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 6	Senior Product Development Manager	Senior Manager	Senior Production Manager	Senior QA Manager	Senior QA Manager
LEVEL 5	Food Specialist	Product Development Manager	C107-002-5:2017	QA Manager	QA Manager
LEVEL 4	Food Technologist	Product Development Executive	C107-002-4:2017	QA/QC Executive	Halal Executive
LEVEL 3	Assistant Food Technologist	Assistant Executive	AF-018-3:2014 AF-012-3:2012 C107-001-3:2017	QC Assistant	QC Assistant
LEVEL 2	No Level	No Level	AF-012-2:2012	QC Operator	QC Operator
LEVEL 1	No Level	No Level	Production Operator	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.

No.	Sub-sector - Job Area/ Job titles	Factor(s) contributing to the demand	Specific requirements and skills
1.	Low Skilled Workers (Elementary workers)	• Majority are foreign workers • Difficult to recruit local workers • Support on the business ramp-up (to support production demands) • Due to working hours in shifts where some workers are reluctant to work in shifts	• Communication skills • Able to read and write • Able to interpret instructions and simple diagrams (i.e. trends) • Skills in utilising basic computer function of various systems used at the production line such as real time monitoring, automation systems etc. • Adapt to automation skills set

2.	Semi-Skilled Workers (Production Supervisor, Production Executive, QA/QC Executive and Halal Executive)	• Need long times to be promoted from senior operator • Require specific knowledge and skills • lack of training provider • lack of technology update • lack of available man power • need specific certification from regulatory body- GMP, HACCP, ISO, certify for quality assurance • awareness increase • worldwide recognition • lack of training/ certification provider	• Communication skills • Able to read and write • Able to interpret instructions and simple diagrams (i.e. trends) • Skills in handling operation food processes. • Adapt to automation skills set • Skills in critical processes
3.	Skilled Workers (Food Specialist, Product Development Manager, Production Manager)	• High in Demand • To fulfil Key Result Areas (KRA) • To ensure daily operation is running smoothly • Lack of exposure to equipment • Technicians with experience in certain areas are usually in more demand • Working in shift pattern • Working environment (foreign workers) • Industry specific • Needs experience • Different technical area • Background/skills in food manufacture • Control the formulation	• Technical skills in food operating and handling equipment • Basic food product knowledge • Possesses knowledge on current food technology • Team work, leadership skills and communication skills • Analytical skill

ii. Skills Gaps

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

No.	Sub-sector - Job Area/ Job titles	Factor(s) contributing to the demand	Specific requirements and skills
1.	Communication (English Language)		
	Overall for all job areas especially executive and Manager level	• Lack of ability to understand verbal or written instructions	• Training in communication at the workplace
2.	Food manufacturing understanding		
	From Operator level till Manager	• Inability to adapt to new technology • Lack of exposure • Insufficient equipment and machinery • Lack of training provider • Lack of hands on experience • Product understanding • Market understanding • Food tech understanding • Manufacturing process understanding • Quality understanding • Standard and specification • Ingredients understanding	• Training • Review of syllabus at training centre or universities • Joint venture with industry to provide facilities • Invite industry during training content development • Get trainer from industry

3.	Trouble shooting and Problem-solving skills		
	Overall for all job areas Operator and above	• Lack of exposure to real working environment problems • Staff are not resourceful when solving problems	• Training and personal development • Review of syllabus at training centre or universities
4.	Basic problem solving and escalation of issues to superior		
	Overall for all job areas especially Operator level	• Lack of job responsibility	• Training and personal development • Review of syllabus at training centre or universities
5.	Safety, health and hygiene		
	Overall for all job areas especially operator level	• Lack of awareness • Lack of continuous supervision and enforcement • Changes in industrial practice	• Review of syllabus at training centre or universities based on current practice • Increase exposure • Improve knowledge and facilities
6.	Sensory skills		
	Executive and above	• Lack of sensory trainings for specific product • Lack of creative talents	• Training • Increase exposure to variety of products • Engagement with external expert
7.	Food scientific knowledge		
	Supervisor and above	• Lack of training provider • Lack of coverage in National education syllabus • Lack of interest • Specific food product formulation • Baking techniques • Raw material grading (cocoa bean) • Shelf life	• Training • Increase exposure to variety of products • Engagement with external expert

8.	Networking skills		
	Manager, executive	• Lack of sales skills • Human communication skills • Lack of fund finding skills	• Training • Increase exposure to variety of agencies/ funding bodies
9.	Handling and packaging		
	Overall for all job areas especially supervisor and above	• Lack of training • Lack of awareness • Lack of coverage in National education syllabus	• Training • Increase exposure to variety of products

iii. Emerging Skills

The following are Emerging Skills

No.	EMERGING SKILLS	JOB AREAS/ JOB TITLES	REASON OF REQUIRED EMERGING SKILLS
1.	IR 4.0 related skills – Interpretation of data, utilisation of automation systems which include ability to configure, utilise, debug, maintain the system	Production department	• Increase productivity, reduce cost and improve efficiency • To minimise human error
2.	Innovation – for continuous improvement, kaizen Skills	Production department	• Increase productivity, reduce cost and improve efficiency • To enhance capability to optimise resources and new technology
3.	New generation dietary food technology (Health conscious product)	New product development	• Availability of new market segment • Competitiveness of company
4.	Artistry (decoration)	Product development Production department	• new market segment • increase customer choice
5.	Technology opportunities Customer need Synthesis of consumer and technology need	product development	• Availability of new market segment • Competitiveness of company

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 other food industry, 6 area and 128 jobs titles 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. The list of NOSS developed under the Division 10 is presented in Table 3.4.

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 Pentauliahan 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 Manufacture of Other Food Products Occupational Framework conducted together with expert panel members from various organizations, a total of 6 area and 128 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:

- Sensory skills
- Analytical and Statistical skills
- Basic problem solving and escalation of issues to superior
- Networking skills
- Communication skills
- Food product knowledge
- Customer service skills
- General attitude towards work (commitment, resourcefulness, teamwork, etc.)
- Problem solving skills
- English language competency

Sensory skills, General attitude towards work, Food Product knowledge, analytical and statistical skills and English language competency are the top 5 skills in high demand by the food industry. The skills above are encouraged to be included in the training curriculum according to the respective areas.

The respondents and Focus Group Discussion members have reviewed the list and specified the critical job titles as in the table 5.1, which level 1 and 2 on each area are highest critical job.

Table 5.1: List of Critical Job Titles

No.	Critical Job Title	Group/Area	Level
1	Production Senior Operator	107/Production (bakery)	2
2	Production Operator	107/Production (bakery)	1
3	Production Senior Operator	107/ Production (sugar)	2
4	Production Operator	107/ Production (sugar)	1
5	Junior Chocolatier	107/ Chocolate processing (Cocoa, chocolate and sugar confectionary)	2
6	Production Operator	107/ Cocoa processing (Cocoa, chocolate and sugar confectionary)	2
7	Production Senior Operator	107/Production (Macaroni, noodles products, etc)	2
8	Production Operator	107/Production (Macaroni, noodles, etc)	1
9	Production Senior Operator	107/Production (Prepared meals and dishes)	2
10	Production Operator	107/Production (Prepared meals and dishes)	1
11	Production Senior Operator	107/Production (other food products n.e.c)	2
12	Production Operator	107/Production (other food products n.e.c)	1
13	Bakery specialist	107/Product development (bakery)	5
14	Product Development Manager	107/Product development (bakery)	5
15	Production Manager / Chief baker	107/Production (bakery)	5
16	Production Executive	107/Production (bakery)	4
17	Production Supervisor	107/Production (bakery)	3
18	QA / QC Executive	107/Quality assurance (bakery)	4
19	Halal Executive	107/Quality assurance (bakery)	4
20	Sugar specialist	107/Product development (sugar)	5
21	Product Development Manager	107/ Production (sugar)	5

No.	Critical Job Title	Group/Area	Level
22	Production Manager	107/ Production (sugar)	5
23	Production Executive	107/ Production (sugar)	4
24	Production Supervisor	107/ Production (sugar)	3
25	QA/QC Executive	107/ Quality assurance (sugar)	4
26	Halal Executive	107/ Quality assurance (sugar)	4
27	Food Specialist	107/Product development (Cocoa, chocolate and sugar confectionary)	5
28	Product Development Manager	107/Product development (Cocoa, chocolate and sugar confectionary)	5
29	Senior Chocolatier	107/ Chocolate processing (Home-Based) (Cocoa, chocolate and sugar confectionary)	4
30	Chocolatier	107/ Chocolate processing (Home-Based) (Cocoa, chocolate and sugar confectionary)	3
31	Senior Chocolatier/ Production Executive	107/ Chocolate processing (Chocolate Manufacturing) (Cocoa, chocolate and sugar confectionary)	4
32	Chocolatier/ Production Supervisor	107/ Chocolate processing (Chocolate Manufacturing) (Cocoa, chocolate and sugar confectionary)	3
33	Production Manager	107/ Cocoa processing (Cocoa, chocolate and sugar confectionary)	5
34	Production Executive	107/ Cocoa processing (Cocoa, chocolate and sugar confectionary)	4
35	QA/QC Executive	107/ Quality assurance (Cocoa, chocolate and sugar confectionary)	4
36	Halal Executive	107/ Quality assurance (Cocoa, chocolate and sugar confectionary)	4
37	Food Specialist	107/Product development (Macaroni, noodles, etc)	5
38	Product Development Manager	107/Product development (Macaroni, noodles, etc)	5
39	Production Manager	107/Production (Macaroni, noodles, etc)	5
40	Production Executive	107/Production (Macaroni, noodles, etc)	4
41	Production Supervisor	107/Production (Macaroni, noodles, etc)	3
42	QA/QC Executive	107/Quality assurance (Macaroni, noodles, etc)	4
43	Halal Executive	107/Quality assurance (Macaroni, noodles, etc)	4
44	Food Specialist	107/Product development (Prepared meals and dishes)	5
45	Product Development Manager	107/Product development (Prepared meals and dishes)	5
46	Production Manager	107/Production (Prepared meals and dishes)	5
47	Production Executive	107/Production (Prepared meals and dishes)	4

No.	Critical Job Title	Group/Area	Level
48	Production Supervisor	107/Production (Prepared meals and dishes)	3
49	QA/QC Executive	107/Quality assurance (Prepared meals and dishes)	4
50	Halal Executive	107/Quality assurance (Prepared meals and dishes)	4
51	Food Specialist	107/Product development (other food products n.e.c)	5
52	Product Development Manager	107/Product development (other food products n.e.c)	5
53	Production Manager	107/Production (other food products n.e.c)	5
54	Production Executive	107/Production (other food products n.e.c)	4
55	Production Supervisor	107/Production (other food products n.e.c)	3
56	QA/QC Executive	107/Quality assurance (other food products n.e.c)	4
57	Halal Executive	107/Quality assurance (other food products n.e.c)	4

5.4 Overall Conclusion

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

The broad direction should aim 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 Manufacture of other food products towards enhancing services provided by the sector players.

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ANNEX 1

MOSQF LEVEL DESCRIPTORS

**MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION FRAMEWORK (MOSQF)
LEVEL DESCRIPTOR**

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	Competent in applying a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources feature strongly, as do personal accountabilities for analysis and diagnosis, design, planning, execution and evaluation. Specialisation of technical skills should be demonstrated
4	Competent in performing a broad range of complex technical or professional work activities carried out in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and allocation of resources is often present. Higher level of technical skills should be demonstrated.
3	Competent in performing a broad range of varied work activities, performed in a variety of context, most of which are complex and non-routine. There is considerable responsibility and autonomy and control or guidance of others is often required

2	Competent in performing a significant range of varied work activities, performed in a variety of context. Some of the activities are non-routine and required individual responsibility and autonomy.
1	Competent in performing a range of varied work activities, most of which are routine and predictable.

ANNEX 2:
LIST OF CONTRIBUTORS

**LIST OF SECTOR PANEL MEMBERS FOR MANUFACTURE OF OTHER FOOD
PRODUCTS FRAMEWORK DEVELOPMENT**

NO	NAME	EXPERTISE	POSITION	ORGANISATION
1	Mohammad Rizman Bin Niger Mahidin	Manufacture of Cocoa	Economic Affairs Officer, Development Chocolate Entrepreneur Section	Economic and Market Development Division, Malaysian Cocoa Board
2	Wan Aidah Bt Wan Ibrahim	Manufacture of Cocoa and Chocolate	Officer Researcher, Food Product Development	Cocoa Downstream Technology Division, Malaysian Cocoa Board
3	Isa Bin Johari	Manufacture of bakery, biscuits and cookies	Chief Executive Officer	Yosh Ventures Sdn Bhd
4	Mohd Irwan Bin Sanusi	Manufacture of sugar	Senior Supply Chain Group Manager	KPF Trading Sdn Berhad
5	Khairunizah Hazila Khalid	Manufacture of other food products n.e.c	Senior Researcher Officer	Center for Food Science and Technology Research, MARDI
6	Muhammad Iqbal Bin Abdullah	Manufacture of other food products n.e.c	Research Officer and Figureered Center Manager (SKM Food Production)	MARDI
7	Nor Sa'adah Ghazali	Manufacture of macaroni, noodles, couscous and similar farinaceous products	Managing Director	Ketodiet Sifu Sdn Bhd
8	Anna Mariana Sherene Samsudin	Manufacture of prepared meals and dishes	Managing Director	Mariana Food Network

LIST OF OCCUPATIONAL FRAMEWORK TECHNICAL EVALUATION COMMITTEE

NO.	NAME	ORGANISATION
1	Mohd Imran Mohd Kamal	Business Development Manager Nuri Enterprises
2	Onnie Zurin Abu	Chief Financial Officer (CFO) Kolamemas Sdn Bhd
3	Saiful Bahri Bin Sa'ari	Peg Penyelidik Kanan (Q48) Pusat Penyelidikan Sains Teknologi Makanan, MARDI

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 Bt Zulkafli	Secretariat
4	Mastura Liza Binti Muhammad	Secretariat
4	Mohd Razali bin Md Yunos	Facilitator
5	Muhammad Hilman bin Abdul Mustapa	Researcher

ANNEX 3: QUESTIONNAIRE

Handling and Maintenance Machine Operation of Food Manufacture and Research and Development on Other Food Products 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:

Muhammad Hilman Bin Abdul Mustapa: kinghilman42@gmail.com

Survey Respondent Details

- (a) Name of Company :
- (b) Address :
- (c) Contact Person :
- (d) Position :
- (e) Email :

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 Other Food 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	Rating Score
1	Analytical and Statistical skills	
2	Sensory Skills	
3	Communication skills	
4	Food Product Knowledge	
5	Customer service skills	
6	General Attitude Towards work (commitment, resourcefulness, teamwork, etc.)	
7	Problem Solving skills	
8	English language competency	

1.2 Based on your observation, do you think the graduates / trainee / apprentice / current workers possess the skills required by the food 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)

☐ 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.

☐ 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 other food products?**

Tick (✓) where applicable.

Category of Skills	Description
Skilled Workers	Managers, Professionals, Technicians and Associate Professionals
Semi-Skilled Workers	Production Supervisor, Production Executive, QA / QC Executive and Halal Executive
Low Skilled Workers	Elementary Workers

No.	Job Areas & Category of Skills	High Shortage	Mid Shortage	Low Shortage	No Shortage
1	Handling and Maintenance machine operation of food manufacture				
	a) Skilled Workers				
	b) Semi-Skilled Workers				
	c) Low Skilled Workers				
2	Researcher and Development on other food products				
	d) Skilled Workers				
	e) Semi-Skilled Workers				
	f) 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 (Digitalisation) (IR4.0) would give an impact to the economic activities of Handling and Maintenance machine and Researcher and Development on manufacture of other food products?

☐ 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	
		Handling and Maintenance Machine Operation	Research and Development on other food products
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 Analyse 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	Handling and Maintenance machine operation				
2	Researcher and Development on other food products				

SECTION 4: RELATED ISSUES

4.1 What is/are the key issue/s related to Handling and Maintenance machine operation and Researcher and Development on other food products?

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	
		Handling and Maintenance machine operation	Researcher and Development on other food products
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		

ANNEX 4:
OCCUPATIONAL DESCRIPTIONS (OD)

SECTION : (C) MANUFACTURING
DIVISION : (10) MANUFACTURE OF FOOD PRODUCTS
GROUP : (107) MANUFACTURE OF OTHER FOOD PRODUCTS

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF BAKERY)

JOB TITLE : PRODUCTION SENIOR OPERATOR

LEVEL : 2

RESPONSIBILITIES:

Production senior operator is responsible the planning and maintaining of finished goods inventory levels and production schedules needed to satisfy sales demand. It also responsible for all the planning functions surrounding the maintenance of the plan schedules and inventory levels including spoilage management, bulk operations, inventory turns, capacity management and interfacing with customer service.

Knowledge:

- Knowledge to operate process equipment such as reactors, columns, compressors, pumps, etc. in order to make quality bakery product and meet business needs
- Knowledge of personal protective equipment in order to prevent personal injury
- Knowledge in General Safety and Food Safety for bakery process.
- keeps records of production through put and material usage on a daily basis within the production line
- Assures that Product Quality is an absolute priority utilizing IPM, Plant Teams and outside resources to accomplish this

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF BAKERY)

JOB TITLE : PRODUCTION OPERATOR

LEVEL : 1

RESPONSIBILITIES:

Production Operator is responsible for take and record process data (pressure, temperature, flow rates, etc.) in order to monitor and evaluate process status. Read, interpret, and follow oral and written instructions such as operations' guidelines, plant orders, standard operating conditions, and operating procedures in order to properly operate the unit.

Knowledge:

- Knowledge to operate process equipment such as reactors, columns, compressors, pumps, etc. in order to make quality bakery product and meet business needs
- Knowledge of personal protective equipment in order to prevent personal injury
- Follow all prescribed safety and environmental practices in order to prevent injuries, prevent incidents, and ensure compliance with all environmental regulations.
- Knowledge in General Safety and Food Safety for bakery process.
- Keeps records of production through put and material usage on a daily basis within the production line

Skills :

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Achiever

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF SUGAR)

JOB TITLE : PRODUCTION SENIOR OPERATOR

LEVEL : 2

RESPONSIBILITIES:

Production senior operator is responsible the planning and maintaining of finished goods inventory levels and production schedules needed to satisfy sales demand. It also responsible for all the planning functions surrounding the maintenance of the plan schedules and inventory levels including spoilage management, bulk operations, inventory turns, capacity management and interfacing with customer service.

Knowledge:

- Knowledge to operate process equipment such as reactors, columns, compressors, pumps, etc. in order to make quality bakery product and meet business needs
- Knowledge of personal protective equipment in order to prevent personal injury
- Knowledge of quality blending of finished products and the bulk, drum, and pail packaging of products
- Keeps records of production through put and material usage on a daily basis within the production line
- Comply with all applicable ISO requirements

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF SUGAR)

JOB TITLE : PRODUCTION OPERATOR

LEVEL : 1

RESPONSIBILITIES:

Production Operator is responsible for take and record process data (pressure, temperature, flow rates, etc.) in order to monitor and evaluate process status. Read, interpret, and follow oral and written instructions such as operations' guidelines, plant orders, standard operating conditions, and operating procedures in order to properly operate the unit.

Knowledge:

- Knowledge to operate process equipment such as reactors, columns, compressors, pumps, etc. in order to make quality bakery product and meet business needs
- Knowledge of quality blending of finished products and the bulk, drum, and pail packaging of products
- Knowledge of personal protective equipment in order to prevent personal injury
- Keeps records of production through put and material usage on a daily basis within the production line
- Comply with all applicable ISO requirements

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Achiever

MSIC GROUP : 107

**JOB AREA : CHOCOLATE PROCESSING (MANUFACTURE OF COCOA,
CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : JUNIOR CHOCOLATIER

LEVEL : 2

RESPONSIBILITIES:

Junior chocolatier is responsible for Assist in prepare chocolate moulding, Assist to perform chocolate centre making, Assist to create decoration of chocolate, co-ordination with packing room, efficient production planning based on orders, maintaining excellent quality standards, maintaining stock registers and compliance with health & safety & food safety plan

Knowledge:

- Knowledge of chocolate production
- Knowledge of develop chocolate recipes
- Knowledge on GMP & HACCP and experience in chocolate industry
- Knowledge of current food regulatory requirements and standards
- Knowledge of common food QA/QC laboratory methods

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Motivated
- Passion for chocolate
- Easy going
- Team player
- Strong work ethic
- Communicative
- Knowledgeable

MSIC GROUP : 107

**JOB AREA : COCOA PROCESSING (MANUFACTURE OF COCOA,
CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : PRODUCTION OPERATOR

LEVEL : 2

RESPONSIBILITIES:

Production Operator in cocoa processing is responsible for the efficient and safe machine operation, producing high quality product. Production operator must maintain safe and clean working environment by complying with procedures, rules, and regulations. Must be able to work effectively in a team-based environment, set priorities to meet deadlines, handle multiple tasks, and make decisions under pressure.

Knowledge:

- Safety requirements required by company policy
- Adjust functional devices and control instruments on enrobers and tempering units for proper operation
- Enrobing operational procedures
- Set up and adjust processing and packaging equipment
- Work closely with Q.C. to assure conformity of product to customer requirements
- Monitor products conformity and ensure compliance to company's standards

Skills:

- Data analysis/ collection
- Communication skills
- Leadership skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Flexibility
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF MACARONI
, NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : PRODUCTION SENIOR OPERATOR

LEVEL : 2

RESPONSIBILITIES:

Production senior operator in manufacture of macaroni, noodles, couscous & similar farinaceous products is responsible the planning and maintaining of finished goods inventory levels and production schedules needed to satisfy sales demand. It also responsible for all the planning functions surrounding the maintenance of the plan schedules and inventory levels including spoilage management, bulk operations, inventory turns, capacity management and interfacing with customer service.

Knowledge:

- Knowledge to operate process equipment such as reactors, columns, compressors, pumps, etc. in order to make quality bakery product and meet business needs
- Knowledge of personal protective equipment in order to prevent personal injury
- Knowledge of quality blending of finished products and the bulk, drum, and pail packaging of products
- Keeps records of production through put and material usage on a daily basis within the production line
- Comply with all applicable ISO requirements

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF MACARONI
, NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : PRODUCTION OPERATOR

LEVEL : 1

RESPONSIBILITIES:

Production Operator in manufacture of macaroni, noodles, couscous & similar farinaceous products are responsible for the efficient and safe machine operation, producing high quality product. Production operator must maintain safe and clean working environment by complying with procedures, rules, and regulations.

Knowledge:

- Safety requirements required by company policy
- Adjust functional devices and control instruments on enrobers and tempering units for proper operation
- Enrobing operational procedures
- Set up and adjust processing and packaging equipment
- Report equipment problems and the need for preventive maintenance with team leader/supervisor;
- Work closely with Q.C. to assure conformity of product to customer requirements
- Monitor products conformity and ensure compliance to company's standards

Skills:

- Data analysis/ collection
- Computer skills
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Flexibility
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE PREPARED
MEALS AND DISHES)**

JOB TITLE : PRODUCTION SENIOR OPERATOR

LEVEL : 2

RESPONSIBILITIES:

Production senior operator is responsible the planning and maintaining of finished goods inventory levels and production schedules needed to satisfy sales demand. It also responsible for all the planning functions surrounding the maintenance of the plan schedules and inventory levels including spoilage management, bulk operations, inventory turns, capacity management and interfacing with customer service.

Knowledge:

- Knowledge to operate process equipment such as reactors, columns, compressors, pumps, etc. in order to make quality bakery product and meet business needs
- Knowledge of personal protective equipment in order to prevent personal injury
- Knowledge of quality blending of finished products and the bulk, drum, and pail packaging of products
- Keeps records of production through put and material usage on a daily basis within the production line
- Comply with all applicable ISO requirements

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF PREPARED MEALS AND DISHES)

JOB TITLE : PRODUCTION OPERATOR

LEVEL : 1

RESPONSIBILITIES:

Production Operator in manufacture of prepared meals and dishes is responsible for the efficient and safe machine operation, producing high quality product. Production operator must maintain safe and clean working environment by complying with procedures, rules, and regulations.

Knowledge:

- Safety requirements required by company policy
- Adjust functional devices and control instruments on enrobers and tempering units for proper operation
- Enrobing operational procedures
- Set up and adjust processing and packaging equipment
- Report equipment problems and the need for preventive maintenance with team leader/supervisor;
- Work closely with Q.C. to assure conformity of product to customer requirements
- Monitor products conformity and ensure compliance to company's standards

Skills:

- Data analysis/ collection
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Flexibility
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Motivated

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF
OTHER FOOD PRODUCTS N.E.C)**

JOB TITLE : PRODUCTION SENIOR OPERATOR

LEVEL : 2

RESPONSIBILITIES:

Production senior operator in manufacture of other food products n.e.c is responsible the planning and maintaining of finished goods inventory levels and production schedules needed to satisfy sales demand. It also responsible for all the planning functions surrounding the maintenance of the plan schedules and inventory levels including spoilage management, bulk operations, inventory turns, capacity management and interfacing with customer service.

Knowledge:

- Knowledge to operate process equipment such as reactors, columns, compressors, pumps, etc. in order to make quality bakery product and meet business needs
- Knowledge of personal protective equipment in order to prevent personal injury
- Knowledge of quality blending of finished products and the bulk, drum, and pail packaging of products
- Keeps records of production through put and material usage on a daily basis within the production line
- Comply with all applicable ISO requirements

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF OF
OTHER FOOD PRODUCTS N.E.C)**

JOB TITLE : PRODUCTION OPERATOR

LEVEL : 1

RESPONSIBILITIES:

Production Operator in manufacture of other food products n.e.c is responsible for the efficient and safe machine operation, producing high quality product. Production operator must maintain safe and clean working environment by complying with procedures, rules, and regulations.

Knowledge:

- Safety requirements required by company policy
- Adjust functional devices and control instruments on enrobers and tempering units for proper operation
- Enrobing operational procedures
- Set up and adjust processing and packaging equipment
- Report equipment problems and the need for preventive maintenance with team leader/supervisor;
- Work closely with Q.C. to assure conformity of product to customer requirements
- Monitor products conformity and ensure compliance to company's standards

Skills:

- Data analysis/ collection
- Computer skills
- Communication skills
- Verbal skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Flexibility
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF BAKERY)

JOB TITLE : BAKERY SPECIALIST

LEVEL : 5

RESPONSIBILITIES:

Bakery specialist is responsible for Create idea for formulations, test the created formulations, develop and identify test method, determine, implement & monitor research and development strategies, develop and implement research project, lead and coordinate research project., monitor the cost and effectiveness of the research and provide advices to organization.

Knowledge:

- Knowledge of originate new product
- Formulations creation
- Knowledge on test method.
- Research and development strategies.
- Costing and effectiveness of the research.

Skills:

- Test the created formulations
- Develop and implement research project
- Lead and coordinate research project

Attribute (Attitude/safety/environmental):

- Analytical
- Figurative
- Adaptability
- Team Player
- Imaginative
- Independent
- Corporative

MSIC GROUP : 107

JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF BAKERY)

JOB TITLE : PRODUCT DEVELOPMENT MANAGER

LEVEL : 5

RESPONSIBILITIES:

Product Development Manager is responsible for develop product by identify potential product, conduct market research, product requirement, product specification prototype development and product design.

Knowledge:

- Knowledge of originate new bakery product
- Statistical analysis/ Data collection
- Computer literacy/ survey conductivity
- Business acumen
- Leadership and communication

Skills:

- Market research
- Market trend
- Production process
- Materials and ingredients
- Capabilities/ facilities
- Costing
- Mould/ cast
- Presentation skills

Attribute (Attitude/safety/environmental):

- Ambitious Analytical
- Team player
- Independent
- Boundless Enthusiasm
- Credibility
- Loyalty
- Adaptability
- Professionalism

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF BAKERY)

JOB TITLE : PRODUCTION MANAGER / CHIEF BAKER

LEVEL : 5

RESPONSIBILITIES:

Chief baker is responsible for planning and organising production schedules, organising the repair of production equipment and organising the routine maintenance of bakery production equipment.

Knowledge:

- Knowledge of originate new bakery product
- Knowledge of production of bakery process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for wholesomeness, appearance, dimension, weight, flavour and texture
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of Manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Data analysis/ collection
- Presentation skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Achiever
- Ambitious

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF BAKERY)

JOB TITLE : PRODUCTION EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Production Executive is responsible for planning and organising production schedules, organising the repair of production equipment and organising the routine maintenance of production equipment.

Knowledge:

- Knowledge of originate new bakery product
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for wholesomeness, appearance, dimension, weight, flavour and texture
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of Manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of production of bakery process
- Knowledge of materials and ingredients
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Leadership skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF BAKERY)

JOB TITLE : PRODUCTION SUPERVISOR

LEVEL : 3

RESPONSIBILITIES:

Production Supervisor is responsible for all production activity (including mixing, depositing, baking, freezer loading and unloading, slicing, finishing, ingredient preparation, whipped cream production, hand shop finishing, high speed and secondary line finishing, packaging and labelling) for one area on one shift, five to six day week operation, to meet company service, quality, cost, safety and people objectives. This includes development, implementation and monitoring of programs for SQF, HACCP, product tracking, supplier certification and measuring quality and safety of ingredients.

Knowledge:

- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for wholesomeness, appearance, dimension, weight, flavour and texture
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of production process
- Knowledge of safety and environmental regulations

Skills:

- Data analysis/ collection
- Communication skills
- Interpersonal skills
- Strong quantitative skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF BAKERY)

JOB TITLE : QA / QC EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

QA / QC Executive in bakery is to serve as QA technical resource and shift leader to all hourly QA / QC personnel. This position reports directly to the plant QA Manager. The critical technical functions of the position are to assist the QA Manager to develop, implement, maintain, provide training on and ensure effectiveness of plant food safety and QA / QC functions. Lead or participate in the plant continuous improvement efforts especially those related to food safety and quality. QA executive also need to provide QA oversight and technical supports to the plant in the area's food safety and quality compliance.

Knowledge:

- Knowledge of Continuous Improvement, GMP, HACCP and other food safety / quality program
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge of current SQF (Level 2 or 3) / BRC certification, Siliker, AIB and other major food safety / quality audit requirements
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA / QC laboratory methods
- knowledge of write effective QA / QC procedures and technical reports; bilingual in English

Skills:

- Advanced computer skills: MS Excel / Words / Outlooks.
- Communication skills
- Analytical skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Communicative
- Knowledgeable
- Professionalism
- Critical thinking

MSIC GROUP : 107

JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF BAKERY)

JOB TITLE : HALAL EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Halal Executive in bakery is responsible for Halal Application, renewal, audit and updating document and in charge in yearly calibration equipment.

Knowledge :

- Knowledge of Halal system.
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge on GMP & HACCP and experience in bakery industry
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods
- knowledge of write effective QA/QC procedures and technical reports; bilingual in English

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Flexibility
- Critical thinking

MSIC GROUP : 107

JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF SUGAR)

JOB TITLE : SUGAR SPECIALIST

LEVEL : 5

RESPONSIBILITIES:

Sugar specialist is responsible create idea for sugar formulations, test the created sugar formulations, develop and identify test method. It's also responsible for ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learnings, trainings, workshops, events, meetings). Keep up to date with the latest developments in academia and industry

Knowledge:

- Knowledge of originate new sugar product
- Knowledge of sugar industry organization
- Knowledge of formulations creation
- Knowledge on test method.
- Knowledge of research and development strategies.
- Knowledge of presenting research output and leading scientific writing in the form of publications

Skills:

- Test the created formulations
- Develop and implement research project
- Lead and coordinate research project
- Communication skills
- Analysis skills
- Innovation/renovation skills

Attribute (Attitude/safety/environmental):

- Analytical
- Figurative
- Adaptability
- Team Player
- Imaginative
- Independent

MSIC GROUP : 107

JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF SUGAR)

JOB TITLE : PRODUCT DEVELOPMENT MANAGER

LEVEL : 5

RESPONSIBILITIES:

Product Development Manager in sugar industry is responsible for manages and coordinates sugar product development projects. It's also needs to evaluates and resolves technical feasibility, design optimization, and production issues. Ensures that labelling and marketing/promotion literature match sugar product specifications. Researches and monitors existing client base and industry developments and identifies potential new product opportunities.

Knowledge:

- Knowledge of product marketing strategy
- Knowledge marketing communications strategy
- Knowledge manage customer care service programmes
- Knowledge of the International markets, completion trends of sugar company products.
- Knowledge of maintenance and updating of all products specifications, manuals and quality standards.
- Knowledge of production process
- Knowledge of Materials and ingredients of sugar products

Skills:

- Presentation skills
- Communication skills
- Leadership skills
- Computer literacy skills
- Statistical analysis/ Data collection

Attribute (Attitude/safety/environmental):

- Ambitious Analytical
- Team player
- Independent
- Boundless Enthusiasm
- Credibility

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF SUGAR)

JOB TITLE : PRODUCTION MANAGER

LEVEL : 5

RESPONSIBILITIES:

Production Manager is responsible for planning and organising sugar production schedules, organising the repair of sugar production equipment and organising the routine maintenance of sugar production equipment.

Knowledge:

- Knowledge of originate new sugar product
- Knowledge of production of sugar process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for sugar products
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of Manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Data analysis/ collection
- Presentation skills
- Communication skills
- Leadership skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF SUGAR)

JOB TITLE : PRODUCTION EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Production Executive is responsible for planning and organising sugar production schedules, organising the repair of sugar production equipment and organising the routine maintenance of production equipment.

Knowledge:

- Knowledge of originate new sugar product
- Knowledge of production of sugar process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for sugar products
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of Manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Presentation skills
- Communication skills
- Leadership skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

JOB AREA : PRODUCTION (MANUFACTURE OF SUGAR)

JOB TITLE : PRODUCTION SUPERVISOR

LEVEL : 3

RESPONSIBILITIES:

Production Supervisor is responsible for all production activity (including mixing, depositing, baking, freezer loading and unloading, slicing, finishing, ingredient preparation, whipped cream production, hand shop finishing, high speed and secondary line finishing, packaging and labelling) for one area on one shift, five to six-day week operation, to meet company service, quality, cost, safety and people objectives. This includes development, implementation and monitoring of programs for SQF, HACCP, product tracking, supplier certification and measuring quality and safety of ingredients.

Knowledge:

- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for sugar products
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of Manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of sugar production process
- Knowledge of materials and ingredients of sugar products

Skills:

- Statistical skills
- Analytical skills.
- Verbal skills
- Interpersonal skills
- Strong quantitative skills

Attribute (Attitude/safety/environmental):

- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF SUGAR)

JOB TITLE : QA/QC EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

QA/QC Executive in sugar production is to serve as QA technical resource and shift leader to all hourly QA/QC personnel. This position reports directly to the plant QA Manager. The critical technical functions of the position are to assist the QA Manager to develop, implement, maintain, provide training on and ensure effectiveness of plant food safety and QA/QC functions. Lead or participate in the plant continuous improvement efforts especially those related to food safety and quality.

Knowledge:

- Knowledge of Continuous Improvement, GMP, HACCP and other food safety / quality program
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge of current SQF (Level 2 or 3) / BRC certification, Siliker, AIB and other major food safety / quality audit requirements
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods
- knowledge of write effective QA/QC procedures and technical reports; bilingual in English

Skills:

- Advanced computer skills: MS Excel / Words / Outlooks.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF SUGAR)

JOB TITLE : HALAL EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Halal Executive in sugar is responsible for Halal Application, renewal, audit and updating document and in charge in yearly calibration equipment.

Knowledge:

- Knowledge of Halal system.
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge on GMP & HACCP and experience in sugar industry
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods
- knowledge of write effective QA/QC procedures and technical reports; bilingual in English

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Flexibility
- Critical thinking

MSIC GROUP : 107

**JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF COCOA,
CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : FOOD SPECIALIST

LEVEL : 5

RESPONSIBILITIES:

Food Specialist in manufacture of cocoa, chocolate and sugar confectionary is responsible create these food products formulations, test the created food formulations, develop and identify test method. It's also responsible for ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learnings, trainings, workshops, events, meetings). Keep up to date with the latest developments in academia and industry

Knowledge:

- Knowledge of originate new food product
- Knowledge of food industry organization
- Knowledge of formulations creation
- Knowledge on test method.
- Knowledge of research and development strategies.
- Knowledge of presenting research output and leading scientific writing in the form of publications

Skills:

- Test the created formulations
- Develop and implement research project
- Lead and coordinate research project
- Analysis skills
- Innovation/renovation skills

Attribute (Attitude/safety/environmental):

- Analytical
- Figurative
- Adaptability
- Team Player
- Imaginative

MSIC GROUP : 107

**JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF COCOA,
CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : PRODUCT DEVELOPMENT MANAGER

LEVEL : 5

RESPONSIBILITIES:

Product Development Manager in cocoa, chocolate and sugar confectionary industry is responsible for manages and coordinates these food product development projects. It's also needs to evaluates and resolves technical feasibility, design optimization, and production issues. Ensures that labelling and marketing/promotion literature match food product specifications. Researches and monitors existing client base and industry developments and identifies potential new product opportunities.

Knowledge:

- Knowledge of product marketing strategy
- Knowledge marketing communications strategy
- Knowledge manage customer care service programmes
- Knowledge of the International markets, completion trends of food company products.
- Knowledge of maintenance and updating of all products specifications, manuals and quality standards.
- Knowledge of production process
- Knowledge of Materials and ingredients of food products

Skills:

- Presentation skills
- Communication skills
- Leadership skills
- Computer literacy skills
- Statistical analysis/ Data collection

Attribute (Attitude/safety/environmental):

- Ambitious Analytical
- Team player
- Independent
- Boundless Enthusiasm

MSIC GROUP : 107

**JOB AREA : CHOCOLATE PROCESSING (MANUFACTURE OF COCOA,
CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : SENIOR CHOCOLATIER

LEVEL : 4

RESPONSIBILITIES:

Senior chocolatier is responsible for daily production of various chocolate recipes, lead to perform chocolate tempering, lead to perform chocolate moulding, lead to perform chocolate centre making, lead to create decoration of chocolate, co-ordination with packing room, efficient production planning based on orders, maintaining excellent quality standards, maintaining stock registers and compliance with health & safety & food safety plan

Knowledge:

- Knowledge of chocolate production
- Knowledge of develop chocolate recipes
- Knowledge on GMP & HACCP and experience in chocolate industry
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Motivated
- Passion for chocolate
- Easy going
- Team player
- Strong work ethic
- Communicative
- Knowledgeable

MSIC GROUP : 107

**JOB AREA : CHOCOLATE PROCESSING (MANUFACTURE OF COCOA,
CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : CHOCOLATIER / PRODUCTION SUPERVISOR

LEVEL : 3

RESPONSIBILITIES:

Chocolatier / Production Supervisor is responsible for assist Senior chocolatier in daily production of various chocolate recipes, perform chocolate tempering, perform chocolate moulding, perform chocolate centre making, create decoration of chocolate, co-ordination with packing room, efficient production planning based on orders, maintaining excellent quality standards, maintaining stock registers and compliance with health & safety & food safety plan

Knowledge:

- Knowledge of chocolate production
- Knowledge of develop chocolate recipes
- Knowledge on GMP & HACCP and experience in chocolate industry
- Knowledge of current food regulatory requirements and standards
- Knowledge of common food QA/QC laboratory methods

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Motivated
- Passion for chocolate
- Easy going
- Team player
- Strong work ethic
- Communicative
- Knowledgeable

MSIC GROUP : 107

**JOB AREA : COCOA PROCESSING (MANUFACTURE OF
COCOA, CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : PRODUCTION MANAGER

LEVEL : 5

RESPONSIBILITIES:

Production Manager is responsible for planning and organising cocoa production schedules, organising the repair of cocoa production equipment and organising the routine maintenance of cocoa production equipment.

Knowledge:

- Knowledge of cocoa production
- Knowledge of develop cocoa recipes
- Production process of cocoa products
- Materials and ingredients

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- Organisational skills
- Statistical skills
- Data analysis/ collection
- Presentation skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Achiever
- Ambitious

MSIC GROUP : 107

**JOB AREA : COCOA PROCESSING (MANUFACTURE OF
COCOA, CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : PRODUCTION EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Production Executive is responsible for production planning, control and scheduling, overseas, direct and lead cocoa manufacturing operation, coordinate production staff and equipment, ensure the quality and profitability of products and produce production report and other related performance report to the superior as required

Knowledge:

- Extensive knowledge in manufacturing process steps for production of cocoa
- Knowledge of type and usage of cocoa processing machine, equipment and cleaning procedures (mixing, refining, conching, 3 in 1 concher, moulding machines)
- Knowledge in production management and understanding of plant process and Operational needs

Skills:

- Leadership skill
- Decision making skill
- Strong public relation skill
- Problem solving skill
- Management skill
- Good working relationship with others
- Language proficiency

Attribute (Attitude/safety/environmental):

- Enthusiasm
- Credibility
- Loyalty
- Adaptability
- Team Player
- Imaginative
- Independent

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF
COCOA, CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : QA / QC EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

QA / QC Executive in cocoa, chocolate and sugar confectionary production is to serve as QA technical resource and shift leader to all hourly QA / QC personnel. This position reports directly to the plant QA Manager. The critical technical functions of the position are to assist the QA Manager to develop, implement, maintain, provide training on and ensure effectiveness of plant food safety and QA / QC functions. Lead or participate in the plant continuous improvement efforts especially those related to food safety and quality.

Knowledge:

- Knowledge of Continuous Improvement, GMP, HACCP and other food safety / quality program
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge of current SQF (Level 2 or 3) / BRC certification, Siliker, AIB and other major food safety / quality audit requirements
- Knowledge of current food regulatory requirements and standards
- Knowledge of common food QA / QC laboratory methods
- Knowledge of write effective QA / QC procedures and technical reports; bilingual in English

Skills:

- Advanced computer skills: MS Excel / Words / Outlooks.
- Analytical skills
- Interpersonal skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF
COCOA, CHOCOLATE AND SUGAR CONFECTIONARY)**

JOB TITLE : HALAL EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Halal Executive in manufacture of cocoa, chocolate and sugar confectionary is responsible for Halal Application, renewal, audit and updating document and in charge in yearly calibration equipment.

Knowledge:

- Knowledge of Halal system.
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge on GMP & HACCP and experience in food industry
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA / QC laboratory methods
- knowledge of write effective QA / QC procedures and technical reports; bilingual in English

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Flexibility
- Critical thinking

MSIC GROUP : 107

**JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF MACARONI,
NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : FOOD SPECIALIST

LEVEL : 5

RESPONSIBILITIES:

Food Specialist is responsible create idea for farinaceous product formulations, test the created food formulations, develop and identify test method. It's also responsible for ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learning, trainings, workshops, events, meetings). Keep up to date with the latest developments in academia and industry

Knowledge:

- Knowledge of originate new food product
- Knowledge of food industry organization
- Knowledge of formulations creation
- Knowledge on test method.
- Knowledge of research and development strategies.
- Knowledge of presenting research output and leading scientific writing in the form of publications

Skills:

- Test the created formulations
- Develop and implement research project
- Lead and coordinate research project
- Communication skills
- Analysis skills
- Innovation/renovation skills

Attribute (Attitude/safety/environmental):

- Analytical
- Figurative
- Adaptability
- Team Player
- Imaginative

MSIC GROUP : 107

**JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF MACARONI,
NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : PRODUCT DEVELOPMENT MANAGER

LEVEL : 5

RESPONSIBILITIES:

Product Development Manager in farinaceous industry is responsible for manages and coordinates farinaceous product development projects. It's also needs to evaluates and resolves technical feasibility, design optimization, and production issues. Ensures that labelling and marketing/promotion literature match farinaceous product specifications. Researches and monitors existing client base and industry developments and identifies potential new product opportunities.

Knowledge:

- Knowledge of product marketing strategy
- Knowledge marketing communications strategy
- Knowledge manage customer care service programmes
- Knowledge of the International markets, completion trends of food company products.
- Knowledge of maintenance and updating of all products specifications, manuals and quality standards.
- Knowledge of production process
- Knowledge of Materials and ingredients of farinaceous products

Skills:

- Presentation skills
- Communication skills
- Leadership skills
- Computer literacy skills
- Statistical analysis/ Data collection

Attribute (Attitude/safety/environmental):

- Ambitious Analytical
- Team player
- Independent
- Boundless Enthusiasm

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF MACARONI,
NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : PRODUCTION MANAGER

LEVEL : 5

RESPONSIBILITIES:

Production Manager is responsible for planning and organising farinaceous production schedules, organising the repair of farinaceous production equipment and organising the routine maintenance of farinaceous production equipment.

Knowledge:

- Knowledge of originate new farinaceous product
- Knowledge of production of farinaceous process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for farinaceous products
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Communication skills
- Leadership skills
- Computer literacy skills
- Statistical analysis/ Data collection

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Achiever

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF MACARONI,
NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : PRODUCTION EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Production Executive is responsible assist production manager for planning and organising farinaceous production schedules, organising the repair of farinaceous production equipment and organising the routine maintenance of production equipment.

Knowledge:

- Knowledge of originate new farinaceous product
- Knowledge of production of farinaceous process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for farinaceous products
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Presentation skills
- Communication skills
- Leadership skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF MACARONI,
NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : PRODUCTION SUPERVISOR

LEVEL : 3

RESPONSIBILITIES:

Production Supervisor is responsible for all farinaceous production activity (including mixing, depositing, freezer loading and unloading, slicing, finishing, ingredient preparation, whipped cream production, hand shop finishing, high speed and secondary line finishing, packaging and labelling) for one area on one shift, five to six day week operation, to meet company service, quality, cost, safety and people objectives. This includes development, implementation and monitoring of programs for SQF, HACCP, product tracking, supplier certification and measuring quality and safety of ingredients

Knowledge:

- Knowledge of farinaceous products formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for farinaceous product.
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of farinaceous production process
- Knowledge of materials and ingredients of farinaceous products

Skills:

- Statistical and analytical skills
- Data analysis/ collection
- Interpersonal skills
- Strong quantitative skills

Attribute (Attitude/safety/environmental):

- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF MACARONI,
NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : QA / QC EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

QA / QC Executive in farinaceous production is to serve as QA technical resource and shift leader to all hourly QA / QC personnel. This position reports directly to the plant QA Manager. The critical technical functions of the position are to assist the QA Manager to develop, implement, maintain, provide training on and ensure effectiveness of plant food safety and QA / QC functions. Lead or participate in the plant continuous improvement efforts especially those related to food safety and quality. QA executive also need to provide QA oversight and technical supports to the plant in the area's food safety and quality compliance.

Knowledge:

- Knowledge of Continuous Improvement, GMP, HACCP and other food safety / quality program
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge of current SQF (Level 2 or 3) / BRC certification, Siliker, AIB and other major food safety / quality audit requirements
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods
- knowledge of write effective QA/QC procedures and technical reports; bilingual in English

Skills:

- Advanced computer skills: MS Excel / Words / Outlooks.
- Communication skills
- Analytical skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF MACARONI,
NOODLES, COUSCOUS & SIMILAR FARINACEOUS PRODUCTS)**

JOB TITLE : HALAL EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Halal Executive in farinaceous industry is responsible for Halal Application, renewal, audit and updating document and in charge in yearly calibration equipment.

Knowledge:

- Knowledge of Halal system.
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge on GMP & HACCP and experience in sugar industry
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods
- knowledge of write effective QA/QC procedures and technical reports; bilingual in English

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Flexibility
- Critical thinking

MSIC GROUP : 107

JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF PREPARED MEALS AND DISHES)

JOB TITLE : FOOD SPECIALIST

LEVEL : 5

RESPONSIBILITIES:

Food Specialist is responsible create idea for meals and dishes products formulations, test the created food formulations, develop and identify test method. It's also responsible for ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learning, trainings, workshops, events, meetings). Keep up to date with the latest developments in academia and industry

Knowledge:

- Knowledge of originate new meals and dishes products
- Knowledge of food industry organization
- Knowledge of formulations creation
- Knowledge on test method.
- Knowledge of research and development strategies.
- Knowledge of presenting research output and leading scientific writing in the form of publications

Skills:

- Test the created formulations
- Develop and implement research project
- Lead and coordinate research project
- Communication skills
- Analysis skills
- Innovation/renovation skills

Attribute (Attitude/safety/environmental):

- Analytical
- Figurative
- Adaptability
- Team Player
- Imaginative

MSIC GROUP : 107

JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF PREPARED MEALS AND DISHES)

JOB TITLE : PRODUCT DEVELOPMENT MANAGER

LEVEL : 5

RESPONSIBILITIES:

Product Development Manager in meals and dishes industry is responsible for manages and coordinates meals and dishes product development projects. It's also needs to evaluates and resolves technical feasibility, design optimization, and production issues. Ensures that labelling and marketing/promotion literature match meals and dishes product specifications. Researches and monitors existing client base and industry developments and identifies potential new product opportunities.

Knowledge:

- Knowledge of meals and dishes product marketing strategy
- Knowledge marketing communications strategy
- Knowledge manage customer care service programmes
- Knowledge of the International markets, completion trends of food company products.
- Knowledge of maintenance and updating of all products specifications, manuals and quality standards.
- Knowledge of production process
- Knowledge of Materials and ingredients of meals and dishes products

Skills:

- Presentation skills
- Communication skills
- Leadership skills
- Computer literacy skills
- Statistical analysis/ Data collection

Attribute (Attitude/safety/environmental):

- Ambitious Analytical
- Team player
- Independent
- Boundless Enthusiasm

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF PREPARED MEALS
AND DISHES)**

JOB TITLE : PRODUCTION MANAGER

LEVEL : 5

RESPONSIBILITIES:

Production Manager is responsible for planning and organising meals and dishes production schedules, organising the repair of meals and dishes production equipment and organising the routine maintenance of meals and dishes production equipment.

Knowledge:

- Knowledge of originate new prepared meals and dishes products.
- Knowledge of production of prepared meals and dishes process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for prepared meals and dishes products
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Data analysis/ collection
- Presentation skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Achiever
- Ambitious

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF PREPARED MEALS
AND DISHES)**

JOB TITLE : PRODUCTION EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Production Executive is responsible assist Production Manager for planning and organising meals and dishes production schedules, organising the repair of meals and dishes production equipment and organising the routine maintenance of production equipment.

Knowledge:

- Knowledge of originate new prepared meals and dishes products.
- Knowledge of production of prepared meals and dishes process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for prepared meals and dishes products
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Presentation skills
- Communication skills
- Leadership skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF PREPARED MEALS
AND DISHES)**

JOB TITLE : PRODUCTION SUPERVISOR

LEVEL : 3

RESPONSIBILITIES:

Production Supervisor is responsible for all meals and dishes production activity (including mixing, depositing, baking, freezer loading and unloading, slicing, finishing, ingredient preparation, whipped cream production, hand shop finishing, high speed and secondary line finishing, packaging and labelling) for one area on one shift, five to six day week operation, to meet company service, quality, cost, safety and people objectives. This includes development, implementation and monitoring of programs for SQF, HACCP, product tracking, supplier certification and measuring quality and safety of ingredients.

Knowledge:

- Knowledge of meals and dishes products formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for wholesomeness, appearance, dimension, weight, flavour and texture
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of meals and dishes production process
- Knowledge of materials and ingredients of meals and dishes products

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF PREPARED MEALS
AND DISHES)**

JOB TITLE : QA / QC EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

QA / QC Executive in meals and dishes production is to serve as QA technical resource and shift leader to all hourly QA / QC personnel. This position reports directly to the plant QA Manager. The critical technical functions of the position are to assist the QA Manager to develop, implement, maintain, provide training on and ensure effectiveness of plant food safety and QA / QC functions.

Knowledge :

- Knowledge of Continuous Improvement, GMP, HACCP and other food safety / quality program
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge of current SQF (Level 2 or 3) / BRC certification, Siliker, AIB and other major food safety / quality audit requirements
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA / QC laboratory methods
- knowledge of write effective QA / QC procedures and technical reports; bilingual in English

Skills:

- Advanced computer skills: MS Excel / Words / Outlooks.
- Communication skills
- Analytical skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF PREPARED MEALS
AND DISHES)**

JOB TITLE : HALAL EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Halal Executive in meals and dishes industry is responsible for Halal Application, renewal, audit and updating document and in charge in yearly calibration equipment.

Knowledge:

- Knowledge of Halal system.
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge on GMP & HACCP and experience in sugar industry
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods
- knowledge of write effective QA/QC procedures and technical reports; bilingual in English

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Flexibility
- Critical thinking

MSIC GROUP : 107

JOB AREA : PRODUCT DEVELOPMENT (MANUFACTURE OF OTHER FOOD PRODUCTS N.E.C.)

JOB TITLE : FOOD SPECIALIST

LEVEL : 5

RESPONSIBILITIES:

Food Specialist is responsible create idea for other food products n.e.c. formulations, test the created food formulations, develop and identify test method. It's also responsible for ensure new scientific and technical knowledge is developed and disseminated throughout NRC and R&D (e.g. through e-learning, trainings, workshops, events, meetings). Keep up to date with the latest developments in academia and industry

Knowledge:

- Knowledge of originate new other food products n.e.c.
- Knowledge of food industry organization
- Knowledge of formulations creation
- Knowledge on test method.
- Knowledge of research and development strategies.
- Knowledge of presenting research output and leading scientific writing in the form of publications

Skills:

- Test the created formulations
- Develop and implement research project
- Lead and coordinate research project
- Communication skills
- Analysis skills
- Innovation/renovation skills

Attribute (Attitude/safety/environmental):

- Analytical
- Figurative
- Adaptability
- Team Player
- Imaginative

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF OTHER FOOD
PRODUCTS N.E.C.)**

JOB TITLE : PRODUCT DEVELOPMENT MANAGER

LEVEL : 5

RESPONSIBILITIES:

Product Development Manager in other food products n.e.c. industry is responsible for manages and coordinates other food products n.e.c. development projects. It's also needs to evaluates and resolves technical feasibility, design optimization, and production issues. Ensures that labelling and marketing/promotion literature match other food products n.e.c. specifications. Researches and monitors existing client base and industry developments and identifies potential new product opportunities.

Knowledge :

- Knowledge of other food products n.e.c. marketing strategy
- Knowledge marketing communications strategy
- Knowledge manage customer care service programmes
- Knowledge of the International markets, completion trends of food company products.
- Knowledge of maintenance and updating of all products specifications, manuals and quality standards.
- Knowledge of production process
- Knowledge of Materials and ingredients of other food products n.e.c.

Skills :

- Presentation skills
- Communication skills
- Leadership skills
- Computer literacy skills
- Statistical analysis/ Data collection

Attribute (Attitude/safety/environmental):

- Ambitious Analytical
- Team player
- Independent
- Boundless Enthusiasm

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF OTHER FOOD
PRODUCTS N.E.C.)**

JOB TITLE : PRODUCTION MANAGER

LEVEL : 5

RESPONSIBILITIES:

Production Manager is responsible for planning and organising other food products n.e.c. production schedules, organising the repair of other food products n.e.c. production equipment and organising the routine maintenance of other food products n.e.c. production equipment.

Knowledge :

- Knowledge of originate new prepared other food products n.e.c.
- Knowledge of production of prepared other food products n.e.c. process
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for other food products n.e.c.
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Data analysis/ collection
- Presentation skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Achiever
- Ambitious

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF OTHER FOOD
PRODUCTS N.E.C.)**

JOB TITLE : PRODUCTION EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Production Executive is responsible Assist Production Manager for planning and organising other food products n.e.c. production schedules, organising the repair of other food products n.e.c. production equipment and organising the routine maintenance of production equipment.

Knowledge:

- Knowledge of originate new other food products n.e.c..
- Knowledge of production of other food products n.e.c.
- Knowledge of materials and ingredients
- Knowledge of formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for other food products n.e.c.
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of manages material usage.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of safety and environmental regulations

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Communication skills
- Leadership skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

**JOB AREA : PRODUCTION (MANUFACTURE OF OTHER FOOD
PRODUCTS N.E.C.)**

JOB TITLE : PRODUCTION SUPERVISOR

LEVEL : 3

RESPONSIBILITIES:

Production Supervisor is responsible for all other food products n.e.c. production activity (including mixing, depositing, baking, freezer loading and unloading, slicing, finishing, ingredient preparation, whipped cream production, hand shop finishing, high speed and secondary line finishing, packaging and labelling) for one area on one shift, five to six day week operation, to meet company service, quality, cost, safety and people objectives. This includes development, implementation and monitoring of programs for SQF, HACCP, product tracking, supplier certification and measuring quality and safety of ingredients

Knowledge:

- Knowledge of other food products n.e.c. formulations, specifications, methods, procedures and practices.
- Knowledge of specifications and standards for other food products n.e.c.
- Knowledge of standard crewing levels for each position within area of responsibility.
- Knowledge of all personnel activities in compliance with all applicable laws, regulations and company policies
- Knowledge of other food products n.e.c. production process
- Knowledge of materials and ingredients other food products n.e.c.

Skills:

- Statistical skills
- Analytical skills.
- Data analysis/ collection
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF OTHER FOOD
PRODUCTS N.E.C.)**

JOB TITLE : QA /QC EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

QA / QC Executive in other food products n.e.c. production is to serve as QA technical resource and shift leader to all hourly QA/QC personnel. This position reports directly to the plant QA Manager. The critical technical functions of the position are to assist the QA Manager to develop, implement, maintain, provide training on and ensure effectiveness of plant food safety and QA / QC functions. Lead or participate in the plant continuous improvement efforts especially those related to food safety and quality.

Knowledge:

- Knowledge of Continuous Improvement, GMP, HACCP and other food safety / quality program
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge of current SQF (Level 2 or 3) / BRC certification, Siliker, AIB and other major food safety / quality audit requirements
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA / QC laboratory methods
- knowledge of write effective QA / QC procedures and technical reports; bilingual in English

Skills:

- Advanced computer skills: MS Excel / Words / Outlooks.
- Communication skills
- Analytical skills
- Interpersonal skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism

MSIC GROUP : 107

**JOB AREA : QUALITY ASSURANCE (MANUFACTURE OF OTHER FOOD
PRODUCTS N.E.C.)**

JOB TITLE : HALAL EXECUTIVE

LEVEL : 4

RESPONSIBILITIES:

Halal Executive in other food products n.e.c. industry is responsible for Halal Application, renewal, audit and updating document and in charge in yearly calibration equipment.

Knowledge:

- Knowledge of Halal system.
- Knowledge of Hands-on GMP / Food Safety / Quality System audit experience.
- Knowledge on GMP & HACCP and experience in other food products n.e.c. industry
- Knowledge of current food regulatory requirements and standards
- knowledge of common food QA/QC laboratory methods
- knowledge of write effective QA/QC procedures and technical reports; bilingual in English

Skills:

- Troubleshooting skills.
- Communication skills
- Analytical skills
- Interpersonal skills
- Leadership skills
- organisational skills

Attribute (Attitude/safety/environmental):

- Corporative
- Communicative
- Knowledgeable
- Professionalism
- Accountability
- Flexibility
- Critical thinking