



**OCCUPATIONAL FRAMEWORK**  
**MSIC 2008 CODE A 012 GROWING OF PERENNIAL CROPS**



**JABATAN PEMBANGUNAN KEMAHIRAN**  
**KEMENTERIAN SUMBER MANUSIA**

Department of Skills Development  
Ministry of Human Resources

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## 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 Growing of Perennial Crops Industry. Chapter 2 includes the industry overview highlighting the definition and scope of the industry, stakeholders, legislation, initiatives and industry & market intelligence of the industry. The third chapter explained the methodology used in the OF development such as qualitative analysis through brainstorming discussion sessions and industry surveys. Chapter 4 discussed the findings 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 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 Growing of Perennial Crops is based on the Malaysian Standards Industrial Classification 2008 (MSIC 2008) under Section A – Agriculture, Forestry and Fishing, Division 01 – Crops and Animal Production, Hunting and Related Service Activities, Group 012 – Growing of Perennial Crops. This industry represents one of the most potential sectors in the economy and a key player in the next industrial revolution – Industry 4.0. The total number of job area identified is 28 with 167 job titles. A total of 73 job titles identified as relevant to Industry 4.0. In order to develop the OF on the Growing of Perennial Crops, all information related to the aforesaid group was gathered through literature review, survey and workshop sessions with industry experts.

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## LIST OF ABBREVIATIONS

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<b>DESCUM</b>	Development of Standard and Curriculum
<b>DSD</b>	Department of Skills Development
<b>OF</b>	Occupational Framework
<b>OD</b>	Occupational Description
<b>OS</b>	Occupational Structure
<b>MOSQF</b>	Malaysian Occupational Skills Qualification Framework
<b>MQA</b>	Malaysia Qualification Agency
<b>MSC</b>	Malaysian Skills Certificate
<b>NOSS</b>	National Occupational Skills Standard
<b>ILB</b>	Industry Lead Body
<b>NKEA</b>	National Key Economic Areas
<b>NCS</b>	National Competency Standard

# **CHAPTER 1: INTRODUCTION**

## **1.1 Chapter Introduction**

This chapter will explain the objectives, scope and problem statement of the Occupational Framework specifically for the Growing of Perennial Crops sector. The concept of Occupational Framework and its function in skills training and curriculum development is also elaborated in this chapter.

Below are descriptions of important elements of the research.

### **1.1.1 Research Background**

There have been various National Occupational Skills Standard (NOSS) documents developed for this area. The analysis on the Occupational Structure of this area of specialisation under Ministry of Human Resources has never been done. This study and analysis are important to ensure the Occupational Framework is in line with the development of the NOSS based on MSIC sections and divisions, therefore this research aims to define the industry as specified in the MSIC based on qualitative research on its Occupational Structure, Critical Jobs and Skills in Demand.

### **1.1.2 National Skills Development Act 2006 (Act 652)**

The National Skills Development Act 2006 (Act 652) came into effect on 1st September 2006 after it was officially gazetted on 29th June 2006, with the mandate of promoting, through skills training, the development and improvement of a person's abilities, which are needed for vocation, and to provide for other matters connected therewith. The Act 652 is significant because for the first time in the history of skills training in Malaysia, a national legislation has been enacted solely and exclusively for skills training and development. In addition, the meaning and scope of skills training has been clarified and given a statutory interpretation that can be used to distinguish it from other components of the country's national education and training system. The Act 652 also provides for the implementation of a Malaysian Skills Certification System, leading to the award of five (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 Malaysia Qualification Framework refers to the policy framework that satisfies both the national and international recognized qualifications. It comprises of titles and guidelines, together with principles and protocols covering articulation and issuance of qualifications and statements of attainment. Element of qualification framework indicate the achievement for each qualification title. It will also provide progression routes for all the graduates in the respective occupational fields.

The MQF has eight levels of qualification in three sectors and supported by lifelong education pathways as shown in the chart 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 Malaysian Occupational Skills Qualification Framework (MOSQF).

MQF Levels	SECTORS			LIFELONG LEARNING
	Skills	Vocational and Technical	Higher Education	
8			Doctoral Degree	Accreditation of Prior Experiential Learning (APEL)
7			Masters Degree	
6			Bachelor's Degree	
5	Malaysian Advanced Skills Diploma	Advanced Diploma	Advanced Diploma	
4	Malaysian Skills Diploma	Diploma	Diploma	
3	Malaysian Skills Certificate 3	Vocational and Technical Certificate	Certificate	
2	Malaysian Skills Certificate 2			
1	Malaysian Skills Certificate 1			

Figure 1.1: MQF Chart

#### **1.1.4 National Occupational Skills Standard (NOSS)**

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

#### **1.1.5 Competency Based Training (CBT)**

Competency Based Training (CBT) is an approach to vocational training which emphasizes on what a person can do in a work place as a result of education and training obtained. CBT is based on performance standards which are set by the sector with main focus on measuring the performance while considering knowledge and attitude rather than the duration taken to complete the course. CBT is a learner-centric; outcome-based approach to training which allows each individual to develop skills at their own pace for a similar outcome, thus meaning training practices can be customized for each individual to achieve a similar outcome. CBT concept is the basis of 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 as the 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 purposes of international comparability, the MSIC 2008 Version 1.0 conforms closely to the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4, published by the United Nations Statistics Division, with some modifications to suit national requirements. The objective of an industrial classification system is to classify data in respect of the economy according to categories of activities and the characteristics of which will be similar. The MSIC is a classification of all types of economic activities and is not a classification of goods & services nor is it a classification of occupations.<sup>1</sup>

## **1.2 Objective of Study**

The objectives of the study are as below:

- a. To produce Occupational Structure (OS) from data analysis, interviews, site visits and focus group;
- b. To determine job descriptions of each job title from the OS; and
- c. To investigate the jobs and skills in demand in the sector.

## **1.3 Scope of Study**

The scope of work for the study to develop occupational framework are as listed below:

- a. To conduct literature review on the current sector;
- b. To consult with relevant sector representatives to obtain expert input for determined sector;

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<sup>1</sup> Department of Statistics Malaysia. (2008). Malaysia Standard Industrial Classification (MSIC).

- c. To develop, disseminate and analyse survey data from industries via sector representatives;
- d. To perform focus group discussion with the sector representatives, interviews, and/or any other methods in order to achieve the study outcome.

#### **1.4 Justification for MSIC Section Selection**

In order to make a clear justification for MSIC section selection, the purpose of this research needs to spell out clearly.

- a. The purpose of this research other than to gain information on Occupational Structure (OS), Occupational Description (OD), Critical Jobs and also Skills in Demand, it is also focusing on knowing the growth and potential of commodities in Malaysia. This research also only covers on group 012 that is growing of perennial crops.
- b. This research also will focus only on growing the plant and will not cover harvesting, manufacture and also product development.
- c. The current NOSS registry (May 2018) has stated that the NOSS relevant to the industry are under Section A, Division 01, Group 012.

## **1.5 Chapter Summary**

In this chapter, research background includes all acts (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 are further discussed. Item that had been discussed in this chapter are purposely to give a clear understanding about the research to the reader. The objectives, scope and justification of this research have also been defined in this chapter.

This research aims to define the industry needs based on qualitative research on its Occupational Structure, Jobs in Demand and Skills in Demand. This research output can be a crucial information that help in knowing the lack in the industry and also can be utilize as a strategy for stakeholder in order to meet industrial needs.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Chapter Introduction

This chapter will emphasis on the explanation of the Growing of Perennial Crops sector focusing on the current scenario in Malaysia, introduction to government policies, development plans, government bodies and competitiveness at international level.

Findings in this chapter were obtained via literature review, observation, interviews with sector practitioners and discussions during workshops with development panel members. This literature review will be further discussed with panel members to obtain insight on the matters at hand from a practitioner's perspective.

### 2.2 Definition of Research Area

The research area is focusing on activities of growing of commodity perennial crops. As stated earlier the definition of the research area is aligned with MSIC. Based on MSIC 2008, definition and scope of coverage for the Occupational Framework is as follows: -

Table 2.1: Summary of MSIC Section, Division and Group

MSIC Section	C	Agriculture, Forestry and Fishing
MSIC Division	01	Crops and Animal Production, Hunting and Related Service Activities
MSIC Group	012	Growing of perennial crops
MSIC Class	0121	Growing of grapes
	0122	Growing of tropical and subtropical fruits
	0123	Growing of citrus fruits
	0124	Growing of pome fruits and stone fruits
	0125	Growing of other tree and bush fruits and nuts
	0126	Growing of oleaginous fruits
	0127	Growing of beverage crops
	0128	Growing of spices, aromatic, drugs and pharmaceutical crops
	0129	Growing of other perennial crops



Group 012 includes the growing of oleaginous fruits, growing of beverage crops, growing of spices, aromatic, drugs and pharmaceutical crops, and growing of other perennial crops.

### 2.3 Scope of Occupational Framework Based on MSIC 2008

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

Table 2.2: MSIC Section, Division and Group

Classification	Code	Description
<b>Section</b>	<b>A</b>	<b>Agriculture, Forestry and Fishing</b>
<b>Division</b>	<b>01</b>	<b>Crops and Animal Production, Hunting and Related Service Activities</b>
<b>Group</b>	<b>012</b>	<b>Growing of perennial crops</b> This group includes the growing of perennial crops, i.e. plants that lasts for more than two growing seasons, either dying back after each season or growing continuously. Included is the growing of these plants for the purpose of seed production.
	<b>0121</b>	<b>Growing of grapes</b>  a) Growing of grapes  <b>Excludes:</b> manufacture of wine
	<b>0122</b>	<b>Growing of tropical and subtropical fruits</b>  a) Growing of banana b) Growing of mango c) Growing of durian d) Growing of rambutan e) Growing of star fruit f) Growing of papaya g) Growing of pineapple h) Growing of pitaya (dragon fruit) i) Growing of other tropical and subtropical fruits n.e.c  <b>Includes:</b> ciku, duku, duku langsung, langsung, dokong, cempedak, kedondong, durian belanda, salak, pulasan, longan, mata kucing, jackfruit, mangosteen and avocado
	<b>0123</b>	<b>Growing of citrus fruits</b>  a) Growing of pomelo b) Growing of lemon and limes c) Growing of tangerines and mandarin d) Growing of other citrus fruits n.e.c.

Classification	Code	Description
	<b>0124</b>	<b>Growing of pome fruits and stone fruits</b> a) Growing of guava b) Growing of other pome fruits and stones fruits n.e.c.
	<b>0125</b>	<b>Growing of other tree and bush fruits and nuts</b> a) Growing of berries b) Growing of fruit seeds c) Growing of edible nuts d) Growing of other tree and bush fruits  <b>Excludes:</b> growing of coconut <b>Includes:</b> strawberries, blueberries, kiwi and other berries <b>Includes:</b> growing of cashew nuts, chestnuts, almonds, pistachios and other nut <b>Includes:</b> growing of locust beans
<b>Class</b>	<b>0126</b>	<b>Growing of oleaginous fruits</b> a) Growing of oil palm (estate) b) Growing of oil palm (smallholdings) c) Growing of coconut (estate and smallholdings) d) Growing of other oleaginous fruits n.e.c  <b>Excludes:</b> growing of soya beans, groundnuts and other oil seeds
	<b>0127</b>	<b>Growing of beverage crops</b> a) Growing of coffee b) Growing of tea c) Growing of cocoa d) Growing of other beverage crops n.e.c
	<b>0128</b>	<b>Growing of spices, aromatic, drugs and pharmaceutical crops</b> a) Growing of pepper (piper nigrum) b) Growing of chilies and pepper (capsicum spp.) c) Growing of nutmeg d) Growing of ginger e) Growing of plants used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes f) Growing of other spices and aromatic crops n.e.c (cat whiskers tongkat ali, cinnamon and cloves)

Classification	Code	Description
	<b>0129</b>	<b>Growing of other perennial crops</b> <ul style="list-style-type: none"> <li>a) Growing of rubber trees (estate)</li> <li>b) Growing of rubber trees (smallholdings)</li> <li>c) Growing of trees for extraction of sap</li> <li>d) Growing of nipa palm</li> <li>e) Growing of areca</li> <li>f) Growing of roselle</li> <li>g) Growing of other perennial crops n.e.c (Christmas tree)</li> </ul> <b>Excludes:</b> gathering of tree sap or rubber-like gums in the wild

## 2.4 Key Stakeholders

The key stakeholders for Growing of Perennial industry in Malaysia comprises of government agencies, regulatory bodies, industry associations and professional bodies and also training centre.

### 2.4.1 Government Agencies and Regulatory Bodies

These are the Government Agencies that are empowered by the legislations according to the scope and powers given in the related acts that directly regulates the Growing of Perennial Crops Sector in Malaysia.

Table 2.3: List of Stakeholder in Growing of Perennial Crops Sector

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
1.	Ministry of Primary Industries (MPI)	<p>MPI act as government agency that formulate policies and strategies for the overall development of the plantation and the commodity sectors.</p> <p>MPI also supervise agencies under the Ministry on management and implementation of plantation and commodities development programs<sup>2</sup>.</p>

<sup>2</sup> Ministry of Primary Industries (MPI) (2018, August 12). Retrieved from <https://www.mpi.gov.my/mpic/index.php/en/about-mpic/profile/overview>

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
2.	Ministry of Agriculture and Agro-Based Industry (MoA)	MOA is the government's principal agency to legislate, plan and implement agriculture, development program's policies and strategies into the agriculture sectors in Malaysia. In terms of the Growing of perennial crops industry, MOA's role is to Conduct R&D and innovation that enhance productivity and competitiveness in the agro-food sector and also post-harvest crops itself, to evaluate, coordinate and ensure the implementation of agro-food agriculture development projects/programs, and promote foreign and local investment in the agro-food sector. MOA also assists in structure and implement an effective and efficient agro-food market chain <sup>3</sup> .
3.	Department of Agriculture (DoA)	DoA is responsible in provide extension services and agricultural development through technology transfer based on good agricultural practices throughout the chain value in order to improve the incomes, production of high-quality crops, adequate and safe for consumption. DoA also assist and produce progressive agriculture entrepreneurs in order to improve the farm productivity and the country's agriculture production. Growing of perennial crops industry will refer DoA in term of consultation in producing high quality crops and foods which are safe for consumption and conserve the environment <sup>4</sup> .
4.	Malaysian Agricultural Research and Development Institute (MARDI)	MARDI is the government agency to conduct researches in the fields of science, technical, economy, and social involving Production, utilization and processing of all crops (except rubber, oil palm and cocoa), livestock and food and integrated farming. MARDI will be referred by Growing of perennial crops

<sup>3</sup> Ministry of Agriculture (MOA). (2018, August 13). Retrieved from <http://www.moa.gov.my/about-moa/posts>

<sup>4</sup> Department of Agriculture (DOA). (2018, August 13). Retrieved from <http://www.doa.gov.my/index.php/pages/view/497?mid=23>

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
		industry in a center that provides expert services in food, agriculture and agro-based industry such as consultancy services, laboratory analysis, quality assurance and contract research and development (R&D) <sup>5</sup> .
5.	Farmers' Organization Authority (FOA)	FOA helps in boost, encourage and strive for economic and social progress of Farmers' Organizations, FOA also register, control and supervise Farmers' Organizations and making provision for related matters. FOA role in Growing of perennial crops industry is supervise and control all activities of PP and agriculture-based cooperatives and also helping in educate and train their member in term of farming and agriculture knowledge <sup>6</sup> .
6.	Bahagian Latihan Kemahiran Pertanian (BLKP)	BLKP was established on October 1, 2002. BLKP is responsible for planning, preparing, monitoring and evaluating National Agricultural Training Program (PLKPK). BLKP also assists produce skilled workers and entrepreneurs in various fields to farm into the private sector into a modern, dynamic and competitive.
7.	Institute of Malaysian Plantation and Commodities (IMPAC)	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 (MRB), Malaysian Timber Industry Board (MTIB), Malaysian Cocoa Board (MCB), Malaysian Pepper Board (MPB) and National Kenaf and Tobacco Board (NKTB). IMPAC helped in Growing of perennial

<sup>5</sup> Malaysian Agricultural Research and Development Institute (MARDI). (2018, August 10). Retrieved <https://www.mardi.gov.my/index.php/pages/view/749?mid=313>

<sup>6</sup> Farmers Organization Authority (FOA). (2018, August 10). Retrieved from <http://www.lpp.gov.my/article/view/fungsi-lpp>

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
		crops industry by providing a suitable training plan to agencies involved under its supervision <sup>7</sup> .
8.	Malaysian Cocoa Board (MCB)	MCB is a federal statutory agency under the Ministry of Primary Industries (MPI) and supervised by IMPAC. MCB objectives are to develop the cocoa industry in Malaysia to be well integrated and competitive in the global market <sup>8</sup> . MCB is important in post-harvest crops industry because it provides technical and advisory services to the cocoa planting and downstream industry.
9.	Malaysian Palm Oil Board (MPOB)	MPOB function is to implement policies and development programmes to ensure the viability of the oil palm industry of Malaysia, conduct and promote research and development activities relating to the oil palm industry, regulate, register, co-ordinate and promote all activities relating to the oil palm industry, develop, promote and commercialize research findings as well as provide technical, advisory and consultancy services to the oil palm industry and also develop and maintain markets for oil palm products as well as promote efficient marketing <sup>9</sup> .
10.	Malaysian Pepper Board (MPB)	MPB are established to implement policies and developmental programmes to ensure the growth and availability of the pepper industry of Malaysia, engage in the trading of pepper, pepper products and to expand to other spices, promote or conduct research and development relating to the pepper industry and to commercialize research findings for the benefit of the pepper industry, promote, control and monitor measures towards attaining high quality pepper, pepper products and other spices and

<sup>7</sup> Institute of Malaysian Plantation and Commodities (IMPAC). (2018, August 10). Retrieved from [https://www.impac.edu.my/about\\_us/about\\_impac/objectives](https://www.impac.edu.my/about_us/about_impac/objectives)

<sup>8</sup> Malaysian Cocoa Board (MCB). (2018, August 10). Retrieved from <http://www.koko.gov.my/lkmbm/loader.cfm?page=aboutus/introduction.cfm>

<sup>9</sup> Malaysian Palm Oil Board (MPOB). (2018, August 10). Retrieved from <http://www.mpob.gov.my/en/about-us/about>

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
		provide technical, advisory, consultancy and related service including training to the pepper industry <sup>10</sup> .
11.	Malaysian Rubber Board (MRB)	The primary objective of MRB is to assist in the development and modernization of the Malaysian rubber industry in all aspects from cultivation of the rubber tree <sup>11</sup> , the extraction and processing of its raw rubber, the manufacture of rubber products and the marketing of rubber and rubber products.
12.	Malaysian Pineapple Industry Board (MPIB)	The objective of MPIB is to carry out research on agronomy programmes and also research on processing related to pineapple industry, discuss on pricing and grading of pineapple fruit for sale to registered pineapple factories, control the production and marketing of pineapple fruit and canned pineapple, manage quality control and health regulations at registered pineapple factories, manage the cess fund and determine the cess rate, collect and store the pineapple industry statistical record, provide financial assistance , either in the form of a subsidy or grant to the overall or part of the small farmers sector and provide attention to all matters related to the pineapple industry.

<sup>10</sup> Malaysian Pepper Board (MPB). (2018, August 10). Retrieved from <http://www.mpb.gov.my/mpb2/index.php/my/mengenai-mpb/profil/matlamat-fungsi.html>

<sup>11</sup> Malaysian Rubber Board (MRB). (2018, August 10). Retrieved from <http://www.lgm.gov.my/general/Aboutus.aspx>

## 2.4.2 Industry Associations and Professional Bodies

The following is the list of industry associations that serve their respective categories of organizations by promoting their interests and facilitate close collaboration between their member organizations towards strengthening the industry. The role and responsibilities of the association are described below:

Table 2.4: List of Industry Associations

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
1.	Malaysian Plant Protection Society (MAPPS)	MPPS is responsible to promote and advance knowledge on all aspect of plant protection in Malaysia. MPPS also organize and arrange lectures, meetings, symposia, seminars, workshops for promotion of and exchange of views among members on plant protection at regional and international levels and publish and communicate scientific knowledge on plant protection and related subjects <sup>12</sup> .
2.	Malaysian Estate Owners' Association (MEOA)	Malaysian Estate Owners' Association (MEOA) is an organization that helps to promote, foster and protect the interests of the plantation industry in Malaysia <sup>13</sup> . MEOA also build bridges by engaging other associations within the industry and keeping its members informed about the latest issues affecting the industry.
3.	Malaysian Palm Oil Association (MPOA) (Website: <a href="http://mpoa.org.my">http://mpoa.org.my</a> )	MPOA provide representation for the industry at both the domestic and international levels, lobby the special interests and needs of the industry, provide long term strategic thinking and direction, shape R&D policies and priorities, support national marketing and promotion efforts and disseminate industry-relevant information to members. <sup>14</sup>

<sup>12</sup> Malaysian Plant Protection Society (MPPS). (2018, August 13). Retrieved from <http://mapps.org.my/introduction/>

<sup>13</sup> Malaysian Estate Owners' Association (MEOA). (2018, August 12). Retrieved from <https://www.meo.org.my>

<sup>14</sup> Malaysian Palm Oil Association (MPOA). (2018, September 26). Retrieved from <http://mpoa.org.my>



NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
4.	The Incorporated Society of Planters (ISP) (Website: <a href="https://www.isp.org.my/v2/">https://www.isp.org.my/v2/</a> )	The Incorporated Society of Planters (ISP) with a proven team at its helm will continue to tap the innovative and technical skills of its members to maintain the growth of the Society and Malaysia's unrivalled record of excellence in plantation agriculture, in the new millennium. ISP also function in award of Professional Qualifications, maintaining a registration, application of membership and publications. <sup>15</sup>

### 2.4.3 Training Centre

The following is the list of training centre dedicated to provide training locally or at regional in areas related to the Growing of Perennial Crops Industry.

Table 2.5: List of Training Centre

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
1.	Pusat Latihan Sawit Malaysia (PLASMA)	PLASMA is the training facilities or Centre of Excellence established by Malaysian Palm Oil Board (MPOB), which prepare and provides training for skills needed in Palm Oil Plantation. There are two PLASMA established at Pahang and Lahad Datu, Sabah.
2.	Cocoa Innovation and Technology Centre	Cocoa Innovation and Technology Centre is the research facilities or Centre of Excellence established by Malaysian Cocoa Board (MCB), which prepare and provides research needed in Cocoa Plantation.
3.	Academic Hevea Malaysia (AHM)	Malaysian Rubber Board (MRB) had established Academy Hevea Malaysia (AHM) on 1 October 2006. The establishment of AHM is in line with the national aspiration to accelerate transfer of technology in rubber. The main objectives of AHM are to provide industry-oriented skills training for the rubber industry, produce adequate skilled

<sup>15</sup> The Incorporated Society of Planters (ISP). (2018, September 23). Retrieved from <https://www.isp.org.my/v2/>

NO.	ORGANISATIONS	OVERVIEW, ROLES, FUNCTIONS AND RESPONSIBILITIES
		manpower for the rubber industry and also expedite technology transfer through technical training <sup>16</sup> . AHM are located at Sungai Buloh, Selangor.
4.	Pusat Latihan dan Pengembangan Lada (PENLada)	PENLada is the training facilities or Centre of Excellence established by Malaysian Pepper Board (MPB), which prepare and provides training and seminar for skills needed in Pepper Farming. PENLada are located at Kuching, Sarawak.
5.	Institut Pertanian Malaysia (IPSM)	Institut Pertanian Malaysia (IPSM) is a leading institution that conduct both education and training in agriculture to youths at certificate level since 1950s. The main objective of IPSM is to create a skilled human capital in helping the transformation of national agricultural sector.
6.	Universiti Putra Malaysia (UPM)	Universiti Putra Malaysia (UPM) a leading research university in Malaysia is located in Serdang, next to Malaysia's administrative capital city; Putrajaya. As a world-renowned centre of learning and research, UPM has attracted students and staff from all around the world making it a well- respected global entity especially in agriculture development

## 2.5 GOVERNMENT LEGISLATION, POLICIES AND INITIATIVES

It is imperative that, this research has to refer to legislation, by-laws and policies that are directly related to growing of perennial crops.

### 2.5.1 Government Legislation

The following legislation are relevant to the group of Growing of Perennial Crops Industry

<sup>16</sup> Academic Hevea Malaysia (AHM). (2018, October 21), Retrieved from <http://www3.lgm.gov.my/ahm/Default.aspx>

Table 2.6: List of Legislations and the related Enforcement Agency

NO.	LEGISLATION	ENFORCEMENT AGENCY	DESCRIPTION OF LEGISLATION
1.	Pesticide Act 1974 (Act 149)	Department of Agriculture (DoA)	Pesticides Act 1974 is the principle legislation to regulate the management of pesticides in Malaysia. The Act covers the management of all pesticides and other chemicals used in agriculture.
2.	Plant Quarantine Act 1976 (Act 167)		An Act to amend and consolidate the laws relating to the control, prevention and eradication of agricultural pests, noxious plants and plant diseases and to extend co-operation in the control of the movement of pests in international trade for matters connected therewith <sup>17</sup> .
3.	Bank Pertanian Malaysia Berhad Act 2008 (Act 684)	N/A	This Act is to provide for the transfer to and for the vesting of Bank Pertanian Malaysia property, rights and liabilities in a company under the name of Bank Pertanian Malaysia Berhad, and to provide for other related matters.
4.	Malaysian Agricultural Research and Development Institute Act (MARDI) 1969 (Act 11)	MARDI	An Act to establish the Malaysian Agricultural Research and Development Institute (MARDI) and for matters connected with it.
5.	Environmental Quality Act 1974	Department of Environment (DOE)	This Act is for the prevention, abatement, control of pollution and enhancement of the environment, and for purposes connected therewith.
6.	Malaysian Cocoa Board (Incorporation) Act 1988	Malaysian Cocoa Board	An Act to establish the Malaysian Cocoa Board and to provide for matters connected therewith.

<sup>17</sup> Ministry of Agriculture (MOA). (2018, August 13). Retrieved from <http://www.moa.gov.my/perundangan>

NO.	LEGISLATION	ENFORCEMENT AGENCY	DESCRIPTION OF LEGISLATION
7.	Malaysian Pepper Board Act 2006 (Act 656)	Malaysian Pepper Board	An Act to establish the Malaysian Pepper Board and to provide for matters connected therewith.
8.	Malaysian Rubber Board (Incorporation) Act 1996 (Act 551)	Malaysian Rubber Board	An Act to establish the Malaysian Rubber Board and to provide for matters connected therewith.
9.	Farmers' Organisation Act 1973 (Act 109)	Farmers' Organisation Board	An Act to incorporate the Farmers' Organization Authority and to make provisions on the relevant matters.
10.	Malaysian Palm Oil Board Act 1998 (Act 582)	Malaysian Palm Oil Board	An Act to establish the Malaysian Palm Oil Board and to provide for matters connected therewith.
11.	Pineapple Industry Act 1957 (Revised 1990) (Act 427)	Malaysian Pineapple Board	An Act to establish the Malaysian Pineapple Board and to provide for matters connected therewith.

### 2.5.2 Government Policies and Initiatives

The prevailing economic plans (IMP3 and RMK11) are still pertinent and remain as Malaysia's mid-term policy guide until 2020. RMK11 (2016-2020) has planned that agriculture industry will be modernize in order to become high income and sustainable sector. Growing of perennial crops industry alongside agriculture will be develop further to ensure this sector will grow at 3.5% per annum, contributing 7.8% to GDP in 2020.

In order for Malaysia to remain as an ambitious investment destination for agriculture in the region and attract a new investor, focus will be given to R&D&C, particularly in the development of quality seeds, breeds, fries and animal feeds, integrated pest and disease management, as well as product improvement, development of green products and in process of growing the plant including perennial crops. In addition, research will also focus on addressing climate change issues to ensure crops, livestock, and fisheries are climate resilient.

All of this is the game changer in agriculture sector that will ensure the development of agriculture sector become reality and achieved the desired target in 2020.

In addition, Malaysia through MOA has also improving productivity and income of farmers, fishermen, and smallholders by accelerating adoption of ICT and farming technology, preserving and optimizing agricultural land, and intensifying R&D&C in priority areas<sup>18</sup>. MOA had launched Strategic Plan ICT (PSICT) that start from 2016-2020 in its mission to implement ICT-based applications to support farm and plantation management, precision farming, and monitoring and surveillance to increase productivity, decrease the workloads and reduce the cost of production<sup>19</sup>. Mobile phone applications and portals will be used to disseminate real-time information on market demand and prices, early detection and warning alerts on disease outbreaks as well as provide interactive platforms for technical advice. Malaysia are fully aware that technology is rapidly growing and by implement and strengthen technology in agriculture sector especially to the workers or farmers, are identified as a huge boost that will improvise agriculture sector significantly.

Government also promoting training and youth agropreneur development through collaboration across agencies and the private sector to modernize farming techniques and nurture agribusiness start-ups. The expansion access to agricultural financing by restructuring and providing a more resource will be done in the mission to increase sustainability of agriculture sector.

### **National Commodity Policy 2011-2020**

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. The seven strategic thrusts to further transform the commodity sector:

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<sup>18</sup> Eleventh Malaysia Plan. Chapter 7: Strengthening infrastructure to support economic expansion. Focus area C Modernising Agriculture. Page 259-261

<sup>19</sup> Pelan Strategik ICT (PSICT). Ministry of Agriculture (MOA). (2018, August 13). Retrieved from <http://www.moa.gov.my/ispmoa>

**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 labour and improve quality along the value chain of the commodity industry.

**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**

Industry and market intelligence are the collection and distribution of data of a sector by using a variety of approaches. The sector will be able to utilise this information to make business decisions, manpower developments and training requirements. Industry intelligence is critical for developing strategies in the areas of manpower development and the impact of those developments.

## 2.6.1 Current Commodity Industry Outlook in Malaysia

The Growing of perennial crops are one of vital part in plantation process and also agriculture sector which it will influence the production in agriculture sector. This sector recorded the highest increase in the average monthly salaries of 7.3 per cent to RM1,504 in 2015. Government through MPI and MoA see the potential of agriculture sector in driving Malaysia to better economic state, increase employment opportunity thus increasing country income. MPI with IMPAC sees that by improving agriculture sector especially in industry commodity will deliver a better environment in agriculture sector and also will gradually see an increment of investment in agriculture sector.

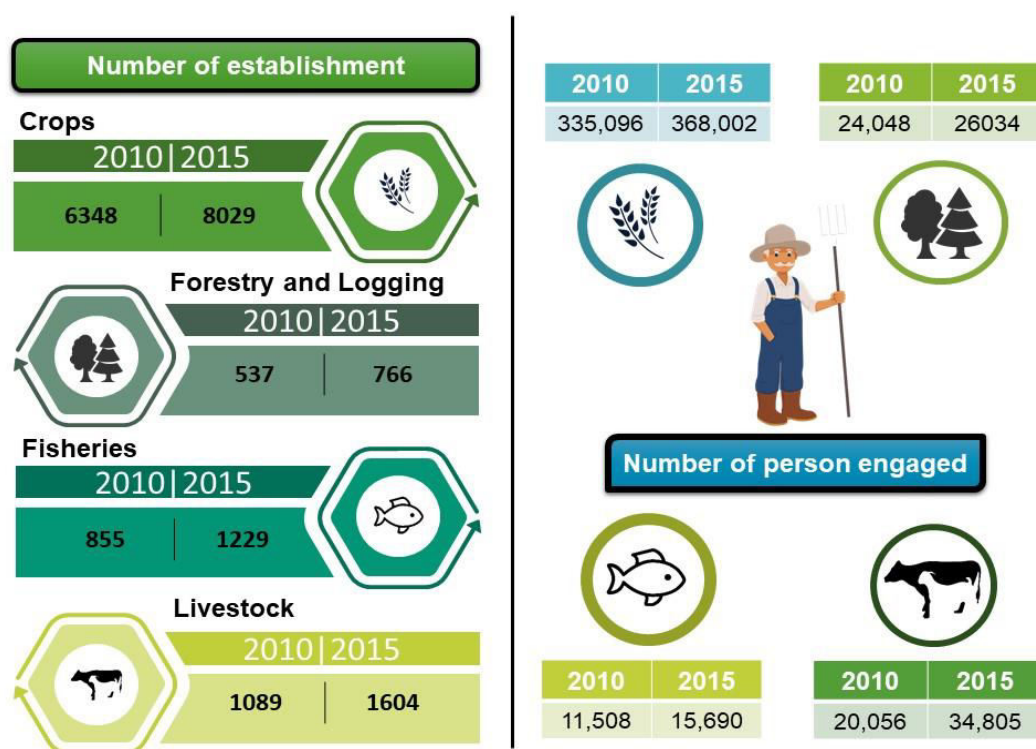


Figure 2.1 Economic Census 2016  
(Source: Department of Statistics Malaysia, 2016)

Based on Economic Census 2016, number of establishments involved in the crops sub-sector was 8,029 establishments. Gross output value was RM50,763.3 million or 68.7 per cent from total gross output of the agriculture sector with value added of RM34,309.5 million. This sub-sector also provides job opportunities to 368,002 people with salaries & wages paid amounting RM6,125.8 million.



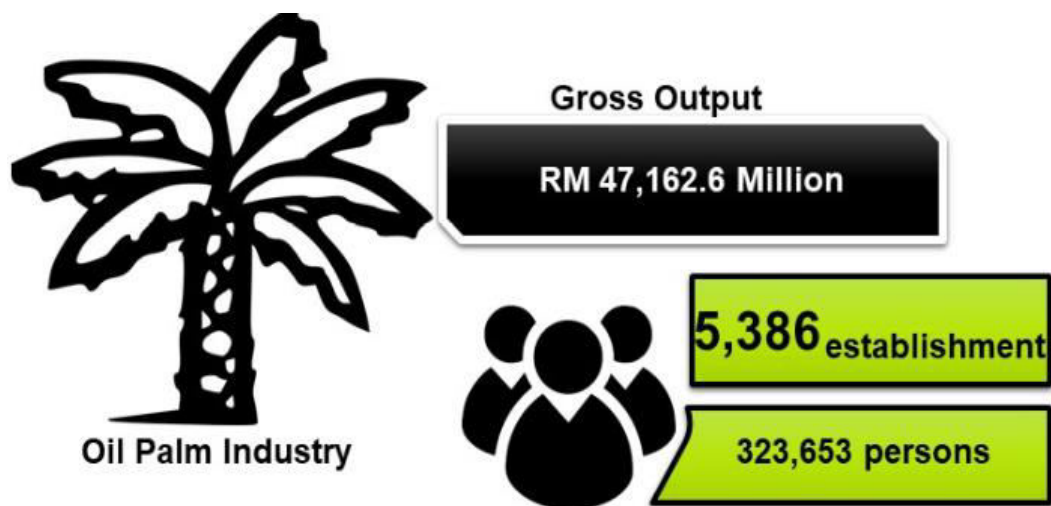


Figure 2.2 Economic Census 2016  
(Source: Department of Statistics Malaysia, 2016)

Oil palm industry was a major industry in the crops sub-sector with involvement of 5,386 establishments. Contribution of gross output in 2015 was RM47,162.6 million, an increase of 6.3 per cent per year from RM34,699.6 million in 2010. Meanwhile, value added of this industry was RM32,477.5 million<sup>20</sup>.

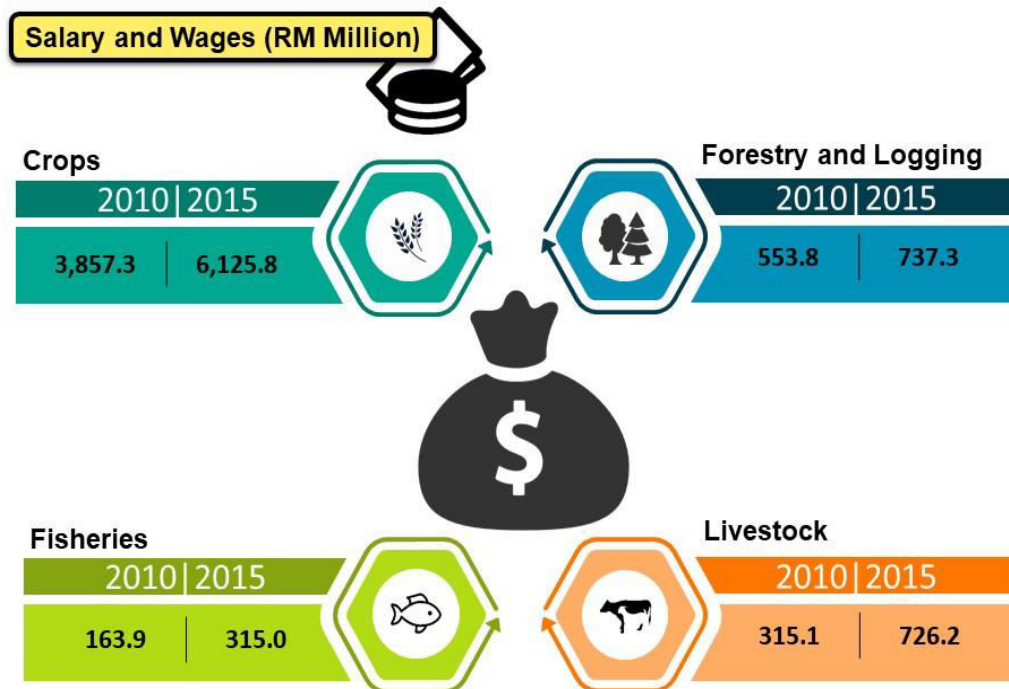


Figure 2.3 Economic Census 2016  
(Source: Department of Statistics Malaysia, 2016)

<sup>20</sup> Department of statistic Malaysia (DOSM). (2016). Economic Census 2016

Agriculture sector provides job opportunities to 444,531 people, recorded an annual growth of 2.6 percent within five years with salaries & wages paid amounting RM7,904.3 million. This sector recorded the highest increase in the average monthly salaries of 7.3 per cent to RM1,504 in 2015.

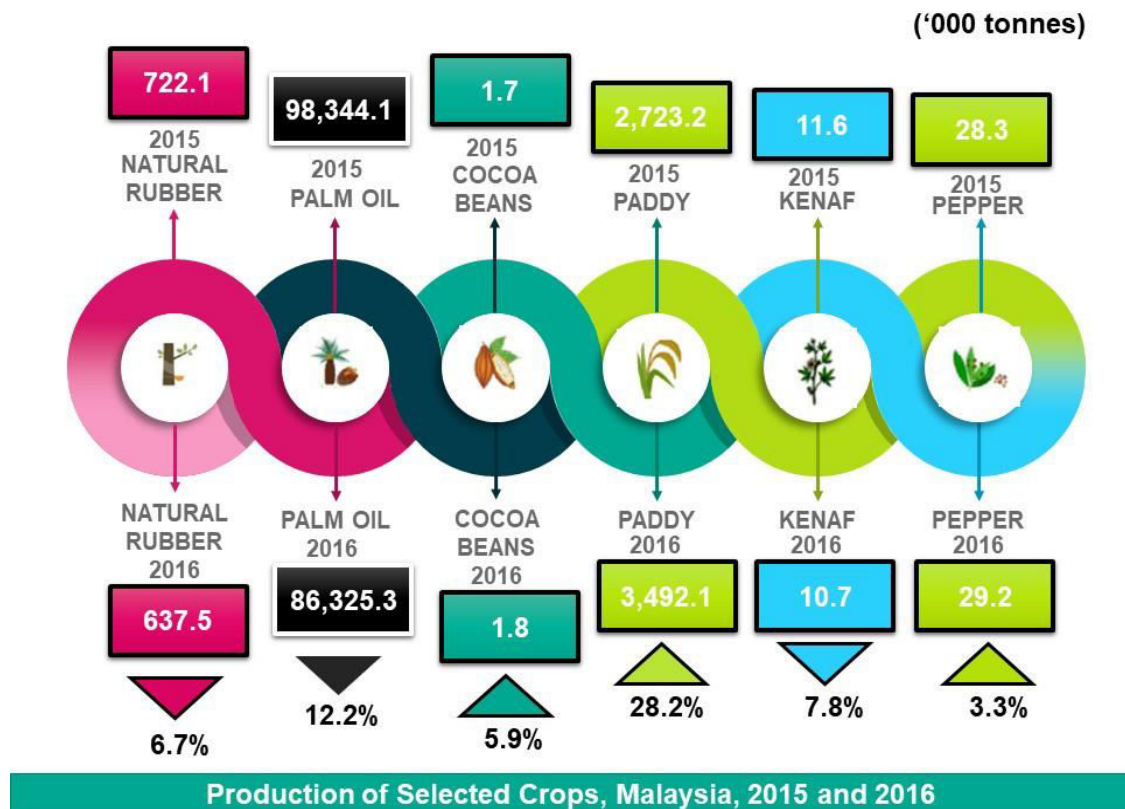


Figure 2.4: Selected Agricultural Indicators 2017, Malaysia  
(Source: Department of Statistics Malaysia, 2018)

The Figure 2.4 above shows Production of selected crops in Malaysia from 2015-2016, it shows that the demand of selected crops in Malaysia are high and increasing by year but it also shows a decrement. The production of natural rubber, palm oil and kenaf decreasing with palm oil with major decrease recording 12.2% decrement, while production of cocoa beans, paddy and pepper increase from 2015 to 2016 with paddy showing a huge increase with 28.2%.

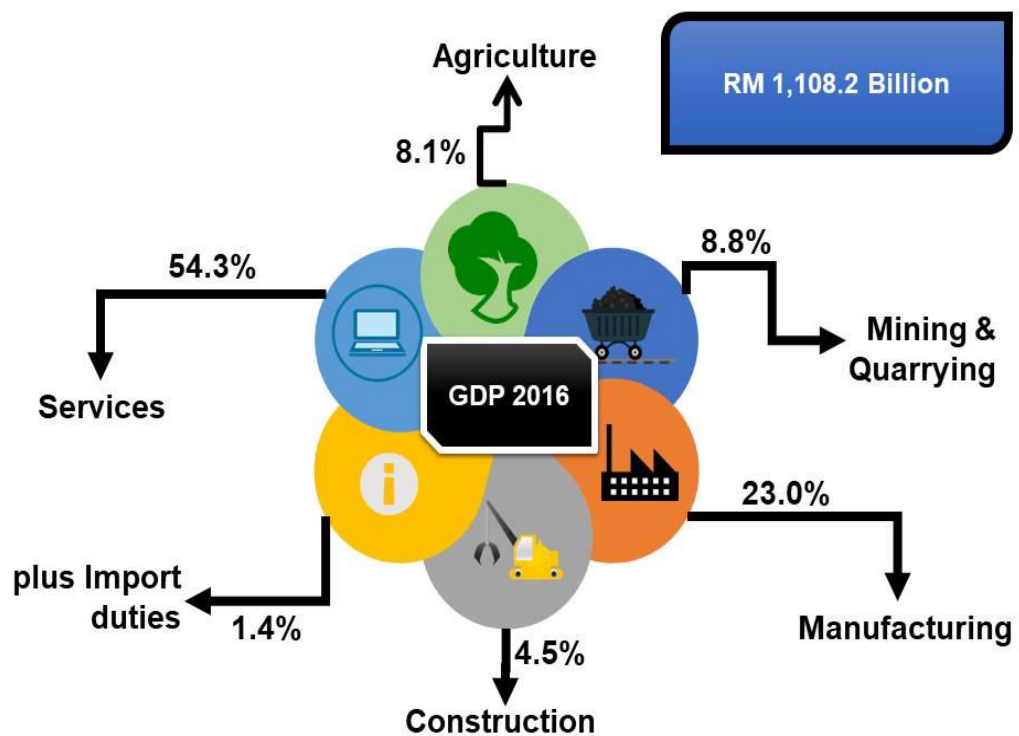


Figure 2.5: Malaysia Economic Structure, 2016  
(Source: Department of Statistics Malaysia, 2016)

The Figure 2.5 above, indicates Agriculture sector recorded 8.1% for national GDP in 2016. Oil palm was a major contributor to the GDP at 43.1% followed by other agriculture (19.5%), livestock (11.6%), fishing (11.5%), forestry & logging (7.2%) as well as rubber (7.1%) in 2016.

### 2.6.2 The Relevancy of Industry 4.0 to Growing of Commodity Crops

Industrial production was transformed by steam power in the nineteenth century, electricity in the early twentieth century, and automation in the 1970s. These waves of technological advancement did not reduce overall employment. With the surge of automation in manufacturing sector, the number of manufacturing jobs decreased but new jobs emerged and the demand for new skills increased. Today, another workforce transformation is on the horizon as manufacturing experiences a fourth wave of technological advancement: the rise of new digital industrial technologies that are collectively known as Industry 4.0.

The Ministry of International Trade and Industry (MITI) has identified the main pillars<sup>21</sup> of Industry 4.0 and the description<sup>22</sup> of each is given as in the table below.

Table 2.7: The 9 Pillars of Industry 4.0's Pillars Acknowledged by MITI

No.	I.R4.0 Pillars	Brief Description
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-

<sup>21</sup> MITI. Industry 4.0. FAQ. [www.miti.gov.my](http://www.miti.gov.my)

<sup>22</sup> Vaidyaa, S., Ambadb, P., Bhoslec, S. (2018). Industry 4.0 – A Glimpse. 2nd International Conference on Materials Manufacturing and Design Engineering. Elsevier B.V.

No.	I.R4.0 Pillars	Brief Description
		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	Cyber-security	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.

Researcher suggested that agriculture sector should be equipped with Internet of Things (IOT) in order to evolve to next level and also make it easier for agriculture sector.

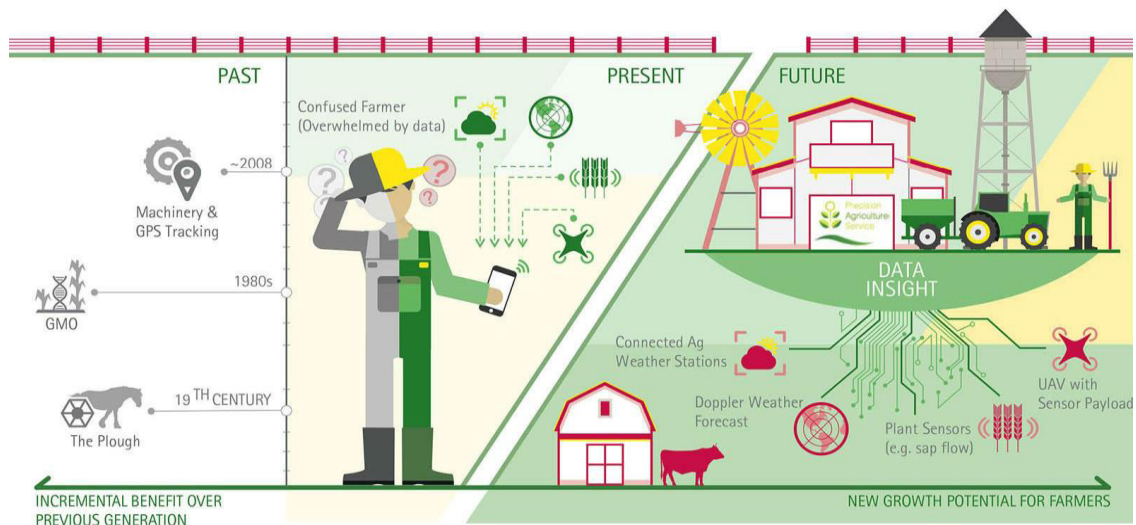


Figure 2.6: Industry 4.0 concept in Agriculture  
(Source: <https://www.accenture.com>,2018)

As shown in figure 2.1 above, the application of technology on agriculture is a new focus industry in Malaysia where farmers start to adopt technologies for remote monitoring and use microcontroller to perform certain decision to meet desired condition. The technologies applied such WSN, LoRAWAN and low power WIFI has been tested and adopted to perform the tasks since the implementation of Industry 4.0<sup>23</sup>. However, largely unknown problem as there seems to be lack of research effort in this newly formed industry. A real-time control environment monitoring system utilizing wireless sensor network has been introduced for decade but technology evolution has required more studies to harden the technologies. More research had to be done in order to make the system stable and the technology can be used optimally with low supervision and give higher impact in managing plantation<sup>24</sup>.

The Government is committed to move away from low-skilled/foreign workers dependency particularly for the agriculture sector. Adopting new technology to ensure companies be more efficient and productive will be in tandem with global

<sup>23</sup> Nizar. 2018. Smart Sensors: Key to Precision Agriculture Applications

<sup>24</sup> Accenture. 2018. Digital Agriculture: Improving Profitability

trends. Cheap labor is unsustainable in the long run and prone to human errors thus reducing the quality of products produced. A prime example is China that is moving towards digitalization on a large scale despite the abundance of cheap labor in the country. The adoption of Industry 4.0 in this type of organization will increase efficiency and promote zero-defect outputs.

## 2.7 Existing National Occupational Skills Standards (NOSS) Relevant to the Activities Related to Commodity Crops

Currently there are 7 National Occupational Skills Standards (NOSS) developed by Jabatan Pembangunan Kemahiran (JPK) that are relevant to the job areas in the growing of perennial crops industry. The details of the existing NOSS relevant to this group are in the tables below.

Table 2.8: Summary of NOSS developed under the Group A 012  
(Source: NOSS Registry May 2018)

MSIC Group	Corresponding NOSS Code	Corresponding NOSS Name	Level
012 Growing of perennial crops	1. A012-001-4:2017	Pineapple Crop Management	Level 4
	2. AF-016-3:2014	Pineapple Plantation Operation	Level 3
	3. RB-081-5:2012	Oil Palm Plantation Management	Level 5
	4. RB-081-4:2012	Oil Palm Plantation Administration	Level 4
	5. RB-081-3:2012	Oil Palm Plantation Operation & Supervision	Level 3
	6. RB-015-3	Estate Conductor	Level 3
	7. RB-015-2	Mandore-Rubber Plantation	Level 2

## **2.8 Chapter Summary**

Based on the literature review findings, the area of Growing of perennial crops is seen as one of the main potential contributors to the economic performance and foreign investment. Presently, there are several stakeholders in the industry comprising of government agencies (i.e. MPI, MOA, DOA, FOA, MARDI, etc.) 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 MPPS and MEOA.

There have been 7 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. This is to allow scalability of skills and to accommodate the emerging skills required in the current Industrial Revolution, which is the 4<sup>th</sup> 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.

As to materialise the above, certain research methodologies will be employed. The description of research strategies and approaches is discussed in next chapter.



## **CHAPTER 3: METHODOLOGY**

### **3.1 Chapter Introduction**

This section gives an overview of the strategies for data collection and potential analyses to be performed to meet the deliverables.

### **3.2 Research Methodology**

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

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

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

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

- a. Document analysis;
- b. Survey Analysis and Industry Visit;
- c. Focus Group Discussion (FGD) workshops.

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

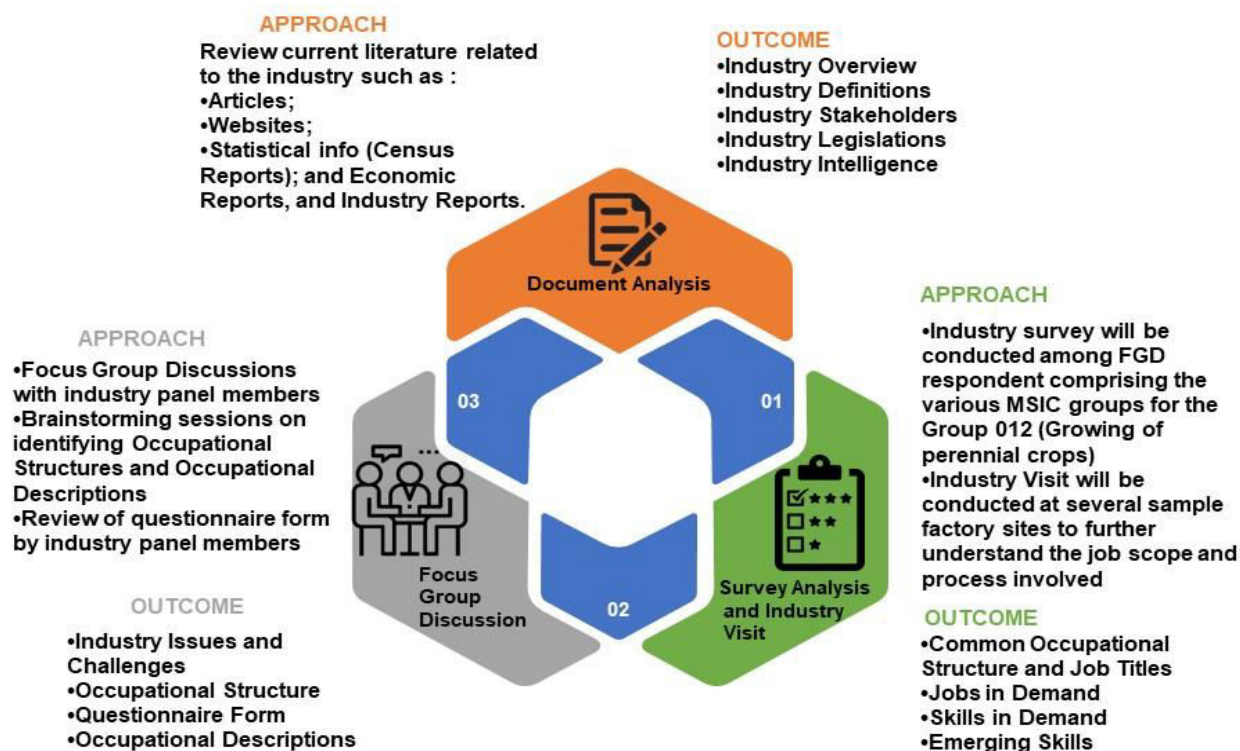


Figure 3.1: Operational Framework of Research

Three methods used to get a sufficient information for this research that is Document Analysis, Focus Group Discussion and Survey Analysis and Industry Visit. Every method used will lead to expected outcome that will be use in this research.

Below are the OF development phases for the Group 012: Growing of Perennial Crops

### 3.2.1 Phase 1: Inception

#### a. Document Analysis

Document analysis or literature review was done in the Inception Phase to obtain an overview of the industry in terms of Industry Definition, Stakeholders, Acts and Industry Intelligence.

In this process, pertinent and relevant information published by the government, regulatory and professional bodies, news agencies, research agencies and any other sources relevant to the background information of the industry were reviewed and analysed.

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

- i. Eleventh Malaysia Plan 2016-2020
- ii. Dasar Komoditi Negara 2012
- iii. Institute for Labour Market Information and Analysis (ILMIA) Report 2016/2017
- iv. Department of Statistics Census Report 2016
- v. Department of Statistics data on Employment and Industry Productivity
- vi. NOSS Registry May 2018
- vii. Malaysian Standard Industrial Classification (MSIC) 2008
- viii. Online newspaper/magazine articles
- ix. Official websites of industry stakeholders and legislations

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, 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 Repair & Installation M&E industry.

#### **b. Industry Engagement / Focus Group Meeting with Development Panel**

The Industry Engagement/Focus Group Discussion (FGD) meeting with the development panel members was conducted to confirm the findings obtained during document analysis with them, review the draft questionnaire form in order to gauge the response of the industry and obtain industry intelligence information such as issues and challenges and use of Industry 4.0.

This is due to certain information especially for the industry intelligence section that is not available in the form of available literature.

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

Table 3.1: List of FGD Participants

NO.	NAME	EXPERTISE AREA	POSITION & ORGANISATION
1	Dr. Rozita Binti Osman	Cocoa Plantation A0127	Researcher Malaysian Cocoa Board
2	Hjh. Winoryantie Binti Sulaiman	Cocoa Plantation A0127	Researcher Malaysian Cocoa Board
3	En. Shaardan Bin Sharif	Rubber Plantation A0129	Senior Manager Malaysian Rubber Board
4	Tn. Hj. Khairani Bin Mohd	Crops Management A0125/A0121/A0123	Managing Director KHM Farm Sdn Bhd
5	En. Unjah Anak Awit	Pepper Farming A0128	Economy Affair Officer Malaysian Pepper Board

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

- i. Industry background;
- ii. Occupational structure; and
- iii. Skills in demand.

In the process of gathering the input, brainstorming technique was adopted and were attended by development panel members who

discussed the different sub-sectors and areas. Facts obtained during the literature review were also discussed and presented to the development panel members. The information gathered was then used as input to the Occupational Framework of the said sub-sector. Workshops and interviews were conducted during the development of the Occupational Framework. Follow up discussions with the expert panel members were done in smaller groups to verify the findings of the Occupational Framework. The details of the workshops are listed below:

Table 3.2: List of Occupational Framework Development Session

Date	Venue	Activity
31 Aug. – 2 Sep. 2018	Ibis Styles Hotel, Cheras, KL	<ul style="list-style-type: none"> <li>• Confirmation of Preliminary Literature Search</li> <li>• Identification of Occupational Structure</li> </ul>
21 – 23 Sep. 2018	Ibis Styles Hotel, Cheras, KL	<ul style="list-style-type: none"> <li>• Confirmation of Preliminary Literature Search</li> <li>• Confirmation of Occupational Structure</li> <li>• Development of Job Description</li> </ul>

In the next phase, the occupational descriptions are developed with the development panel, and the jobs in demand, skills in demand and emerging skills are to be confirmed via the industry survey.

### c. Validation of the Literature Review by Review Panel

The draft report and survey questionnaire were reviewed and validated by the Review Panel comprising of industry representatives. A sample of the validated survey questionnaire is included in this report in **Annex 3**.

The table below lists the evaluation sessions conducted to review the OF document.

Table 3.3: List of Evaluation Sessions

No.	Date	Venue	Activity
1.	18 <sup>th</sup> September 2018	Ibis Style Hotel Cheras	• <b>1<sup>st</sup> JTPOF Technical Evaluation Meeting</b>
2.	11 <sup>th</sup> October 2018	NOSS Division, Level 3, JPK Cyberjaya	• PEMANDU-meeting with JPK officers to review report content
3.	20 <sup>th</sup> October 2018	Ibis Style Hotel Cheras	• <b>2<sup>nd</sup> JTPOF Technical Evaluation Meeting</b>
4.	29 <sup>th</sup> October 2018	NOSS Division, Level 3, JPK Cyberjaya	• PEMANDU- 2 <sup>nd</sup> meeting with JPK officers to review report content

### 3.2.2 Phase 2: Interim

#### a. Interview Surveys

Interview surveys will be conducted concurrently during the industry survey, where the survey respondents will comprise of those from all job areas under the MSIC Group 012. The interviews will try to obtain a 'house view' which means the agreed upon response for the organisation. That is why the target group for the survey is the organisation's Human Resource or higher management representatives. These interviews aim to obtain information on the common occupational structures used in various organisations, their job scopes, skills gap and emerging skills required. The targeted number of industry survey respondents are 30 companies.

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

MSIC SECTION	C	Agriculture, Forestry and Fishing	NUMBER OF TARGETED RESPONDENTS	NUMBER OF ACTUAL RESPONDENTS
MSIC DIVISION	01	Crops and Animal Production, Hunting and Related Service Activities		
MSIC GROUP	012	Growing of perennial crops	30	30

#### b. Qualitative Data Analysis

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

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

### 3.2.3 Phase 3: Final

#### Review and Handover of Final OF document to Industry Stakeholders

The final draft of the OF Document is to be presented to the Review Panel at the Occupational Framework Technical Evaluation Committee meeting for their comments and approval before it is to be submitted to JPK. After obtaining approval from JPK, the document will be handed over to industry stakeholders in the final session of the research. The review and final handover session aim to finalise the OF research project by having the final meeting with industry stakeholder representatives to be briefed on the contents and findings of the research.

### **3.3 Chapter Summary**

This chapter has elaborated on the methodology used in the study which is through data analysis, survey and focus group discussion. The data analysis method had identified 11 documents as a reference, while there are 30 respondents for survey conducted for this OF development. For focus group discussion, there are two session conducted that discussed on Occupational structure, Occupational Description, skill in demand and list of critical jobs for group 012.

The results of the Occupational Structure and Occupational Description development, skills in-demand and list of critical jobs identified by focus group and sector surveys are presented in the next chapter, Chapter 4: Findings.



## CHAPTER 4: FINDINGS

### 4.1 Chapter Introduction

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

### 4.2 Surveys and Questionnaires Analysis

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

#### 4.2.1 Section 1: Competency in Demand

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

The respondents have listed 16 competencies in demand for low and high skilled workers. The competency is listed as follows and the score is presented in the graphs below:

No.	Competency	No.	Competency
<b>A</b>	Data collection and sorting abilities	<b>I</b>	Competent in using software and technology / other mechanical devices
<b>B</b>	Communication ability	<b>J</b>	English language proficiency
<b>C</b>	Plantation knowledge	<b>K</b>	Leadership
<b>D</b>	Decision making ability	<b>L</b>	Managerial Skill (risk management etc.)
<b>E</b>	General attitude towards work (commitment, resourcefulness, teamwork, etc.)	<b>M</b>	Prediction and Forecasting ability
<b>F</b>	Diagnostic ability	<b>N</b>	Financial and Accounting Management
<b>G</b>	Troubleshooting / problem solving ability	<b>O</b>	Human Relation and Talent Management
<b>H</b>	Strong technical prediction / manual dexterity	<b>P</b>	Knowledge of Rules and Legislation related to Plantation Industry

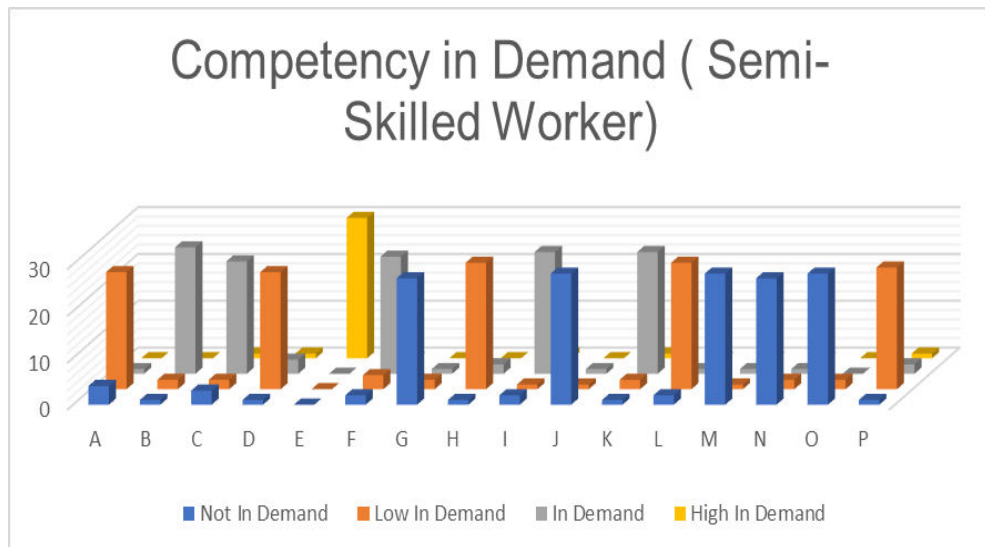


Figure 4.1: Competency in demand (Semi-Skilled Worker)

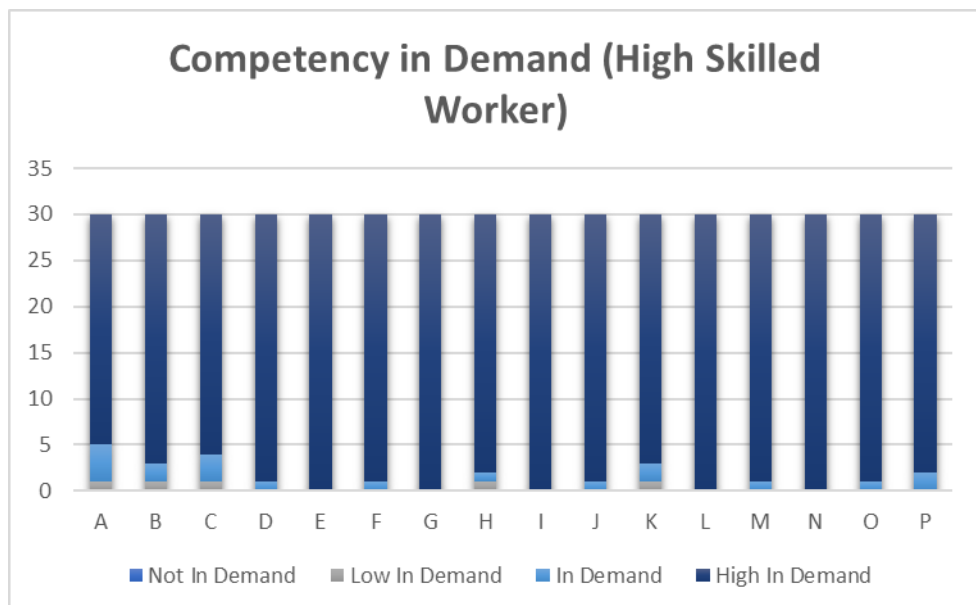


Figure 4.2: Competency in demand (High Skilled Worker)

Based on respondent's answer, the skills that highly demanded by the employer for low skilled worker are general attitude towards work and also communication ability. While for high skilled worker, the skill in demand are troubleshooting / problem solving, general attitude towards work and financial and accounting management.

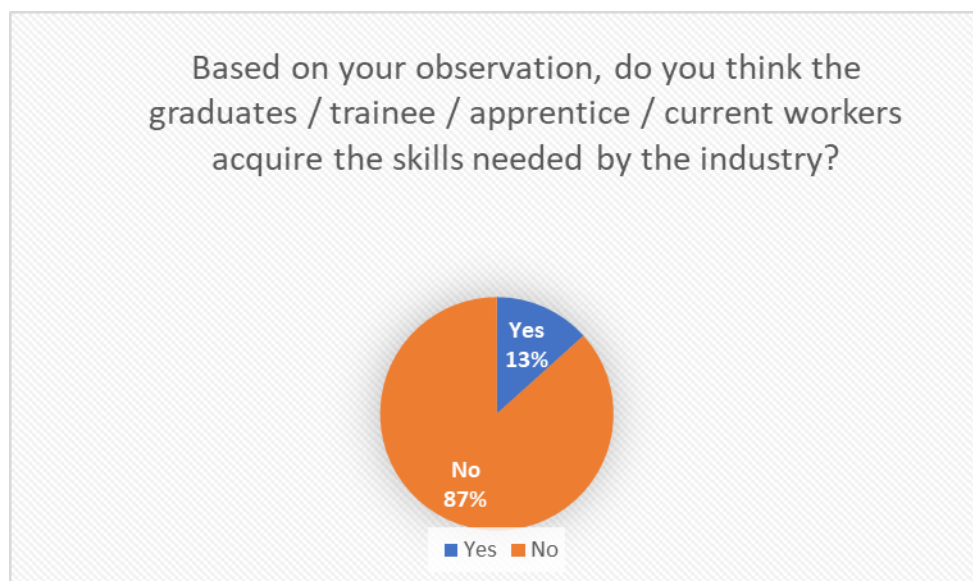


Figure 4.3: Skills mismatch responses

Only 13% of the respondents agreed that the graduates / trainee / apprentice / current workers have the required skills by the employers. The reasons for that are shown in the chart below:

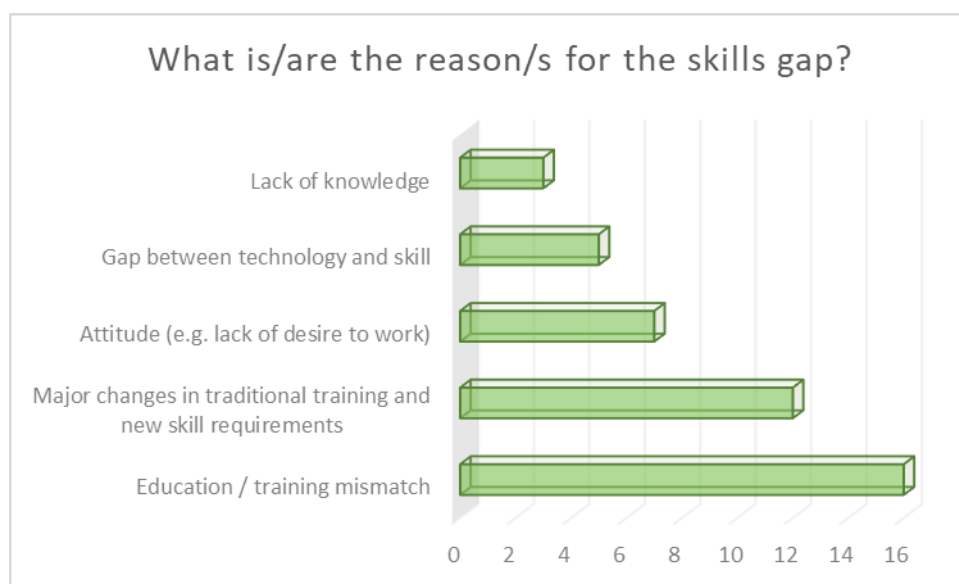


Figure 4.4: Reasons for skills gap

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

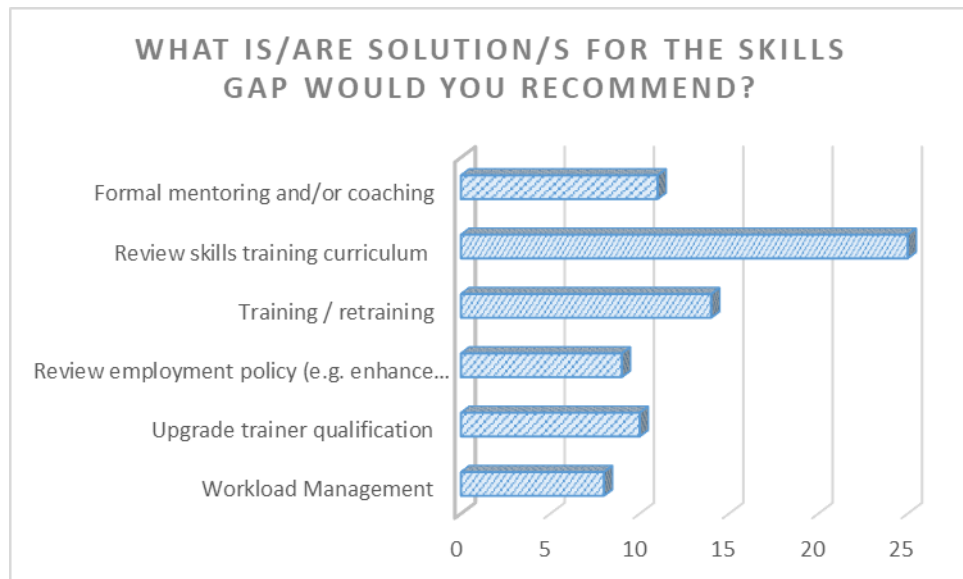


Figure 4.5: Solutions for skills gap

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

#### 4.2.2 Section 2: Jobs in Demand

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

Category of Skills	Description
<b>Skilled Workers</b>	Supervisor, Assistant Manager, Managers, Technologist
<b>Semi-Skilled Workers</b>	General Worker, Plantation Operator

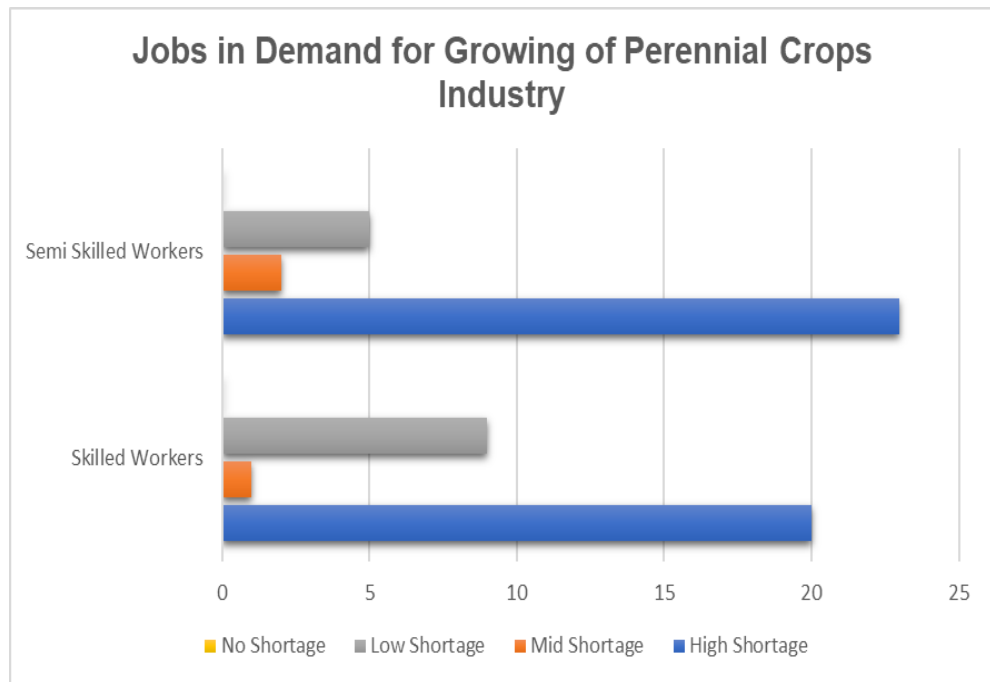


Figure 4.6: Jobs in demand for group 012

The skilled and semi skilled workers for group 012 are highly in demand as the current manpower supply is short of these two groups of workers.

### 4.2.3 Section 3: Emerging Skills

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

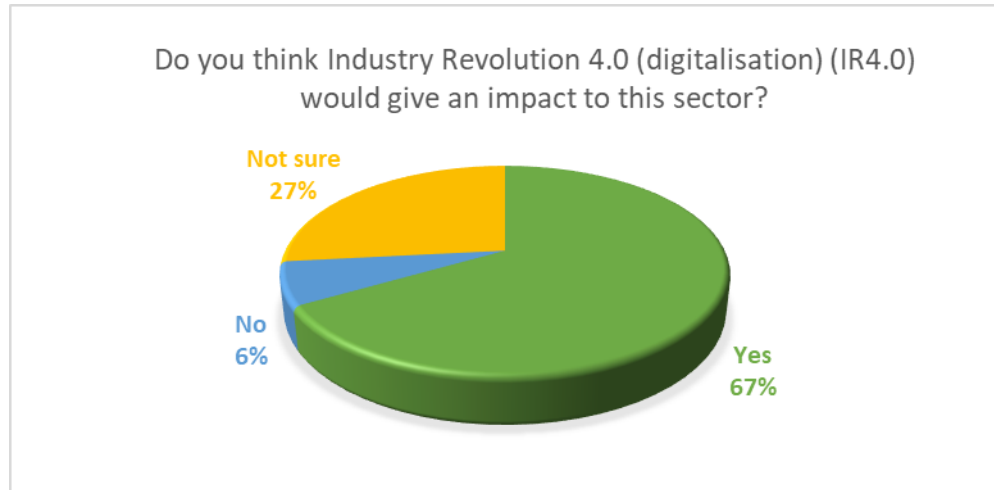


Figure 4.7: Impact of IR40 to the industry

67% of the respondents agreed that IR4.0 would give an impact to this sector. The respondents agreed that all the 9 technology pillars would affect the work of plantation and farming personnel especially for Level 4 and above as shown in Chart 4.8 below.

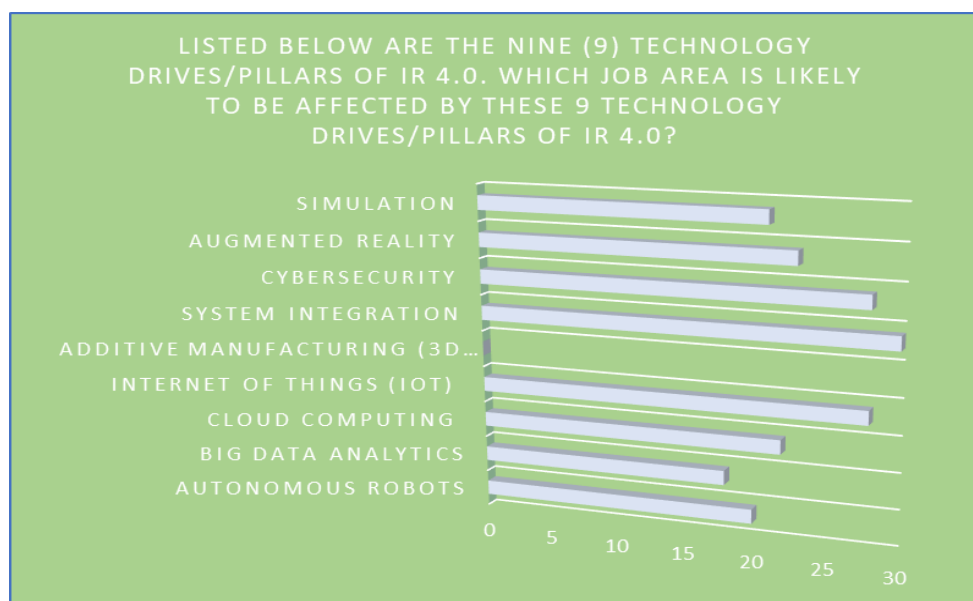


Figure 4.8: The 9 technology drives of IR4.0 in relation to group 012

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
<b>DETAILS</b>	<ul style="list-style-type: none"> <li>▪ Basic Information Technology knowledge</li> <li>▪ Ability to use and interact with computers and smart machines like robots, tablets etc.</li> <li>▪ Understanding machine to machine communication, IT security &amp; data protection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ability to process and analyze data and information obtained from machines</li> <li>▪ Understanding visual data output &amp; making decisions</li> <li>▪ Basic statistical knowledge</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inter-disciplinary &amp; generic knowledge about technology</li> <li>▪ Specialized knowledge about manufacturing activities and processes in place</li> <li>▪ Technical know-how of machines to carry out maintenance related activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adaptability &amp; ability to change</li> <li>▪ Decision making</li> <li>▪ Working in team</li> <li>▪ Communication skills</li> <li>▪ Mindset change for lifelong learning</li> </ul>

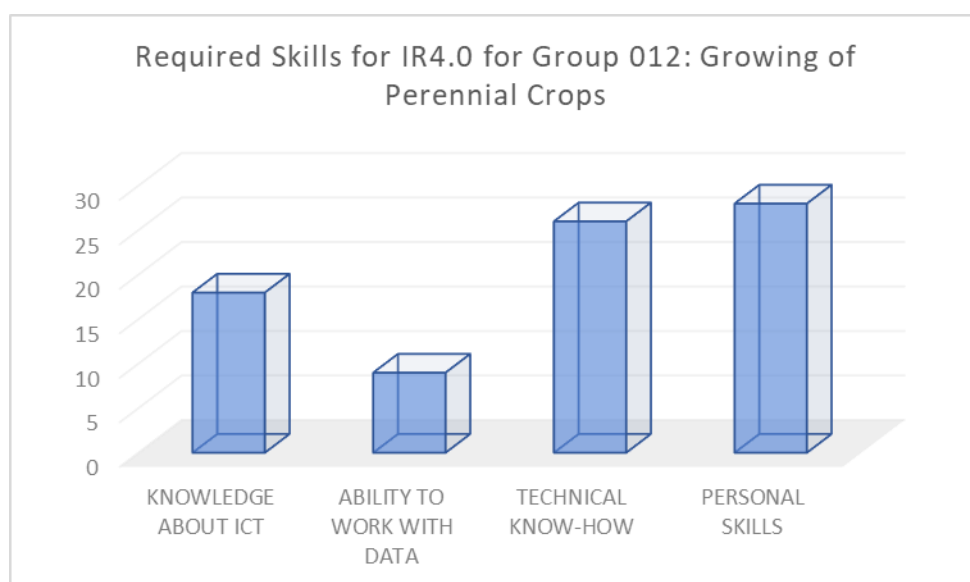


Figure 4.9: Required skills for IR4.0 for group 012

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

#### 4.2.4 Section 4: Related Issues

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

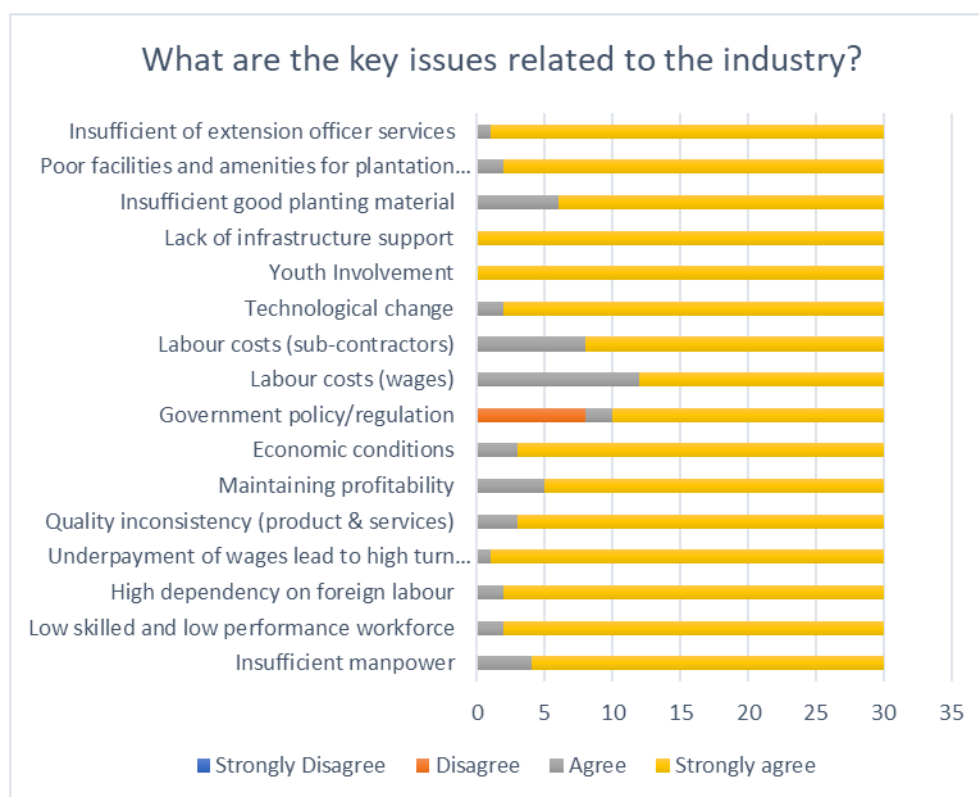


Figure 4.10: Required skills for IR40 for group 012



### 4.3 OCCUPATIONAL STRUCTURE (OS)

Table 4.2: Group 012 Occupational Structure (1 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING					
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES					
GROUP	(012) GROWING OF PERENNIAL CROPS					
AREA	Grapes Farming	Banana Plantation	Mango Plantation	Durian Plantation	Star Fruit Plantation	Papaya Plantation
LEVEL 8	Not Available	Banana Plantation Technologist**	Not Available	Durian Plantation Technologist**	Not Available	Not Available
LEVEL 7	Not Available	Banana Plantation General Manager**	Not Available	Durian Plantation General Manager**	Not Available	Not Available
LEVEL 6	Not Available	Banana Plantation Senior Manager**	Not Available	Durian Plantation Senior Manager**	Not Available	Not Available
LEVEL 5	Grapes Farm Manager	Banana Plantation Manager**	Mango Plantation Manager**	Durian Plantation Manager**	Star Fruit Plantation Manager**	Papaya Plantation Manager**
LEVEL 4	Grapes Farm Assistant Manager	Banana Plantation Assistant Manager**	Mango Plantation Assistant Manager**	Durian Plantation Assistant Manager**	Star Fruit Plantation Assistant Manager**	Papaya Plantation Assistant Manager**
LEVEL 3	Grapes Farm Supervisor	Banana Plantation Supervisor* **	Mango Plantation Supervisor* **	Durian Plantation Supervisor* **	Star Fruit Plantation Supervisor* **	Papaya Plantation Supervisor* **
LEVEL 2	Grapes Farm Operator	Banana Plantation Operator*	Mango Plantation Operator*	Durian Plantation Operator*	Star Fruit Plantation Operator*	Papaya Plantation Operator*
LEVEL 1	Grapes Farm General Worker	Banana Plantation General Worker	Mango Plantation General Worker	Durian Plantation General Worker	Star Fruit Plantation General Worker	Papaya Plantation General Worker

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0

Table 4.3: Group 012 Occupational Structure (2 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING			
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES			
GROUP	(012) GROWING OF PERENNIAL CROPS			
AREA	Pineapple Plantation	Pitaya (Dragon Fruit) Plantation	Orchard Farming (Rambutan, Ciku, Duku, Duku Langsung, Langsung, Dokong, Cempedak, Kedondong, Durian Belanda, Salak, Pulasan, Longan, Mata Kucing, Jackfruit, Mangosteen And Avocado)	Citrus Fruits Plantation (Pomelo, Lemon & Limes, Tangerines & Mandarin)
LEVEL 8	Pineapple Plantation Technologist**	Not Available	Not Available	Not Available
LEVEL 7	Pineapple Plantation General Manager**	Not Available	Not Available	Not Available
LEVEL 6	Pineapple Plantation Senior Manager**	Not Available	Not Available	Not Available
LEVEL 5	Pineapple Plantation Manager**	Pitaya (Dragon Fruit) Plantation Manager	Orchard Farm Manager**	Citrus Fruits Plantation Manager
LEVEL 4	Pineapple Plantation Assistant Manager**	Pitaya (Dragon Fruit) Plantation Assistant Manager	Orchard Farm Assistant Manager**	Citrus Fruits Plantation Assistant Manager
LEVEL 3	Pineapple Plantation Supervisor* **	Pitaya (Dragon Fruit) Plantation Supervisor	Orchard Farm Supervisor* **	Citrus Fruits Plantation Supervisor
LEVEL 2	Pineapple Plantation Operator*	Pitaya (Dragon Fruit) Plantation Operator	Orchard Farm Operator*	Citrus Fruits Plantation Operator
LEVEL 1	Pineapple Plantation General Worker	Pitaya (Dragon Fruit) Plantation General Worker	Orchard Farm General Worker	Citrus Fruits Plantation General Worker

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0

Table 4.4: Group 012 Occupational Structure (3 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING			
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES			
GROUP	(012) GROWING OF PERENNIAL CROPS			
AREA	Guava Plantation	Berries Farming (Strawberries, Blueberries, Kiwi & Other Berries)	Oil Palm Plantation	Coconut Plantation
LEVEL 8	Not Available	Not Available	Oil Palm Plantation Technologist**	Coconut Plantation Technologist**
LEVEL 7	Not Available	Not Available	Oil Palm Plantation General Manager**	Coconut Plantation General Manager**
LEVEL 6	Guava Plantation Senior Manager**	Berries Farm Senior Manager	Oil Palm Plantation Senior Manager**	Coconut Plantation Senior Manager**
LEVEL 5	Guava Plantation Manager**	Berries Farm Manager	Oil Palm Plantation Manager**	Coconut Plantation Manager**
LEVEL 4	Guava Plantation Assistant Manager**	Berries Farm Assistant Manager	Oil Palm Plantation Assistant Manager**	Coconut Plantation Assistant Manager**
LEVEL 3	Guava Plantation Supervisor* **	Berries Farm Supervisor	Oil Palm Plantation Supervisor* **	Coconut Plantation Supervisor* **
LEVEL 2	Guava Plantation Operator*	Berries Farm Operator	Oil Palm Plantation Operator*	Coconut Plantation Operator*
LEVEL 1	Guava Plantation General Worker	Berries Farm General Worker	Oil Palm Plantation General Worker	Coconut Plantation General Worker

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0

Table 4.5: Group 012 Occupational Structure (4 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING			
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES			
GROUP	(012) GROWING OF PERENNIAL CROPS			
AREA	Coffee Farming	Tea Plantation	Cocoa Plantation	Pepper (Piper Nigrum) Farming
LEVEL 8	Not Available	Tea Plantation Technologist**	Not Available	Not Available
LEVEL 7	Not Available	Tea Plantation General Manager**	Not Available	Not Available
LEVEL 6	Not Available	Tea Plantation Senior Manager**	Cocoa Plantation Senior Manager**	Not Available
LEVEL 5	Coffee Farm Manager	Tea Plantation Manager**	Cocoa Plantation Manager**	Pepper (Piper Nigrum) Farm Manager**
LEVEL 4	Coffee Farm Assistant Manager	Tea Plantation Assistant Manager**	Cocoa Plantation Assistant Manager**	Pepper (Piper Nigrum) Farm Assistant Manager**
LEVEL 3	Coffee Farm Supervisor	Tea Plantation Supervisor* **	Cocoa Plantation Supervisor* **	Pepper (Piper Nigrum) Farm Supervisor* **
LEVEL 2	Coffee Farm Operator	Tea Plantation Operator*	Cocoa Plantation Operator*	Pepper (Piper Nigrum) Farm Operator*
LEVEL 1	Coffee Farm General Worker	Tea Plantation General Worker	Cocoa Plantation General Worker	Pepper (Piper Nigrum) Farm General Worker

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0

Table 4.6: Group 012 Occupational Structure (5 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING				
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES				
GROUP	(012) GROWING OF PERENNIAL CROPS				
AREA	Chilies and Pepper Farming (Capsicum Spp.)	Nutmeg Farming	Heliconia Farming	Tongkat Ali Farming	Cinnamon and Cloves Farming
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	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Chilies and Pepper Farm Manager**	Nutmeg Farm Manager	Heliconia Farm Manager	Tongkat Ali Farm Manager	Cinnamon and Cloves Farm Manager
LEVEL 4	Chilies and Pepper Farm Assistant Manager**	Nutmeg Farm Assistant Manager	Heliconia Farm Assistant Manager	Tongkat Ali Farm Assistant Manager	Cinnamon and Cloves Farm Assistant Manager
LEVEL 3	Chilies and Pepper Farm Supervisor* **	Nutmeg Farm Supervisor	Heliconia Farm Supervisor	Tongkat Ali Farm Supervisor	Cinnamon and Cloves Farm Supervisor
LEVEL 2	Chilies and Pepper Farm Operator*	Nutmeg Farm Operator	Heliconia Farm Operator	Tongkat Ali Farm Operator	Cinnamon and Cloves Farm Operator
LEVEL 1	Chilies and Pepper Farm General Worker	Nutmeg Farm General Worker	Heliconia Farm General Worker	Tongkat Ali Farm General Worker	Cinnamon and Cloves Farm General Worker

Note: \*Critical Job Titles

\*\*Jobs relevant to IR 4.0

Table 4.7: Group 012 Occupational Structure (6 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING				
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES				
GROUP	(012) GROWING OF PERENNIAL CROPS				
AREA	Rubber Tree Plantation	Nipa Palm Farming	Areca Farming	Conifers Plantation	Sago (Rumbia) Palm Plantation
LEVEL 8	Rubber Tree Plantation Technologist**	Not Available	Not Available	Not Available	Sago (Rumbia) Plantation Technologist**
LEVEL 7	Rubber Tree Plantation General Manager**	Not Available	Not Available	Not Available	Sago (Rumbia) Plantation General Manager**
LEVEL 6	Rubber Tree Plantation Senior Manager**	Not Available	Not Available	Not Available	Sago (Rumbia) Plantation Senior Manager**
LEVEL 5	Rubber Tree Plantation Manager**	Nipa Palm Farm Manager	Areca Farm Manager	Conifers Plantation Manager	Sago (Rumbia) Plantation Manager**
LEVEL 4	Rubber Tree Plantation Assistant Manager**	Nipa Palm Farm Assistant Manager	Areca Farm Assistant Manager	Conifers Plantation Assistant Manager	Sago (Rumbia) Plantation Assistant Manager**
LEVEL 3	Rubber Tree Plantation Supervisor* **	Nipa Palm Farm Supervisor	Areca Farm Supervisor	Conifers Plantation Supervisor	Sago (Rumbia) Plantation Supervisor* **
LEVEL 2	Rubber Tree Plantation Operator*	Nipa Palm Farm Operator	Areca Farm Operator	Conifers Plantation Operator	Sago (Rumbia) Plantation Operator*
LEVEL 1	Rubber Tree Plantation General Worker	Nipa Palm Farm General Worker	Areca Farm General Worker	Conifers Plantation General Worker	Sago (Rumbia) Plantation General Worker

Note: \*Critical Job Titles

\*\* Jobs relevant to IR 4.0

Table 4.8: Summary of Job Titles

No	Job Area	Level								Total Identified Job Titles	
		1	2	3	4	5	6	7	8		
012-GROWING OF PERENNIAL CROPS											
1	Grapes Farming	1	1	1	1	1	N/A	N/A	N/A	5	
2	Banana Plantation	1	1	1	1	1	1	1	1	8	
3	Mango Plantation	1	1	1	1	1	N/A	N/A	N/A	5	
4	Durian Plantation	1	1	1	1	1	1	1	1	8	
5	Star Fruit Plantation	1	1	1	1	1	N/A	N/A	N/A	5	
6	Papaya Plantation	1	1	1	1	1	N/A	N/A	N/A	5	
7	Pineapple Plantation	1	1	1	1	1	1	1	1	8	
8	Pitaya (Dragon Fruit) Plantation	1	1	1	1	1	N/A	N/A	N/A	5	
9	Orchard Farming ( <i>rambutan, ciku, duku, duku langsung, langsung, dokong, cempedak, kedondong, durian belanda, salak, pulasan, longan, mata kucing, jackfruit, mangosteen and avocado</i> )	1	1	1	1	1	N/A	N/A	N/A	5	
10	Citrus Fruits Plantation (pomelo, lemon & limes, tangerines & mandarin)	1	1	1	1	1	1	N/A	N/A	5	
11	Guava Plantation	1	1	1	1	1	1	N/A	N/A	6	
12	Berries Farming (strawberries, blueberries, kiwi & other berries)	1	1	1	1	1	1	N/A	N/A	6	
13	Oil Palm Plantation	1	1	1	1	1	1	1	1	8	
14	Coconut Plantation	1	1	1	1	1	1	1	1	8	
15	Coffee Farming	1	1	1	1	1	N/A	N/A	N/A	5	
16	Tea Plantation	1	1	1	1	1	1	1	1	8	
17	Cocoa Plantation	1	1	1	1	1	1	N/A	N/A	6	
18	Pepper (Piper Nigrum) Farming	1	1	1	1	1	N/A	N/A	N/A	5	
19	Chilies and Pepper (Capsicum spp.)	1	1	1	1	1	N/A	N/A	N/A	5	
20	Nutmeg Farming	1	1	1	1	1	N/A	N/A	N/A	5	
21	Heliconia Farming	1	1	1	1	1	N/A	N/A	N/A	5	
22	Tongkat Ali Farming	1	1	1	1	1	N/A	N/A	N/A	5	
23	Cinnamon and Cloves Farming	1	1	1	1	1	N/A	N/A	N/A	5	
24	Rubber Tree Plantation	1	1	1	1	1	1	1	1	8	
25	Nipa Palm Farming	1	1	1	1	1	N/A	N/A	N/A	5	
26	Areca Farming	1	1	1	1	1	N/A	N/A	N/A	5	





#### 4.4 TABLE OF JOB RESPONSIBILITIES VS NOSS LEVEL (AREA DESCRIPTION)

Section: (A) Agriculture, Forestry and Fishing

Division: (01) Crops and Animal Production, Hunting and Related Service Activities

Group: (012) Growing of Perennial Crops

Table 4.9: List of Responsibilities for Group 012 according to NOSS Levelling (1 of 10)

AREA	<b>GRAPES FARMING</b> Responsibilities May Includes	<b>BANANA PLANTATION</b> Responsibilities May Includes	<b>MANGO PLANTATION</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	<b><u>Banana Plantation Senior Manager</u></b> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Manage plantation managers to improve on production yield and volume 3) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes, and preparation to seeding to harvesting 4) Manage and deliver assigned projects in meeting timeline, quality and budget 5) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost	NOT AVAILABLE

AREA	GRAPES FARMING	BANANA PLANTATION	MANGO PLANTATION
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
Level 5	<p><b><u>Grapes Farm Manager</u></b></p> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</li> <li>7) Inspects orchards and fields to determine maturity dates of crops</li> </ol>	<p><b><u>Banana Plantation Manager</u></b></p> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarter</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>	<p><b><u>Mango Plantation Manager</u></b></p> <ol style="list-style-type: none"> <li>1) To manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarter</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>

AREA	GRAPES FARMING	BANANA PLANTATION	MANGO PLANTATION
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	<p>or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>		
Level 4	<p><b><u>Grapes Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections including health and welfare</p> <p>3) Keeping up to date and accurate records</p> <p>4) Helping with product marketing and selling to a variety of customers</p> <p>5) Negotiating with suppliers</p> <p>6) Managing any farm diversification activities</p> <p>7) Undertaking practical work as necessary depending on the volume of work and size of the farm.</p>	<p><b><u>Banana Plantation Assistant Manager</u></b></p> <p>1) Monitoring plantation to maximise the production quality of banana</p> <p>2) Implementation and monitoring of budgets to ensure overhead costs are managed</p> <p>3) Manage and control of harvesting operations</p> <p>4) Heading the implementation and timely completion of upkeep work programs</p> <p>5) Monitor plantation operations to make sure its appropriately staffed and labour requirements met</p> <p>6) Managing records to ensure their accurate and up-to-date completion</p>	<p><b><u>Mango Plantation Assistant Manager</u></b></p> <p>1) Monitoring plantation to maximise the production quality of mango</p> <p>2) Implementation and monitoring of budgets to ensure overhead costs are managed</p> <p>3) Manage and control of harvesting operations</p> <p>4) Heading the implementation and timely completion of upkeep work programs</p> <p>5) Monitor plantation operations to make sure its appropriately staffed and labour requirements met</p> <p>6) Managing records to ensure their accurate and up-to-date completion</p>

AREA	GRAPES FARMING	BANANA PLANTATION	MANGO PLANTATION
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
Level 3	<p><b><u>Grapes Farm Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<p><b><u>Banana Plantation Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional plantation</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<p><b><u>Mango Plantation Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional plantation.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>

AREA	<b>GRAPES FARMING</b> Responsibilities May Includes	<b>BANANA PLANTATION</b> Responsibilities May Includes	<b>MANGO PLANTATION</b> Responsibilities May Includes
Level 2	<b><u>Grapes Farm Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Banana Plantation Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Mango Plantation Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>
Level 1	<b><u>Grapes Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Banana Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Mango Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>

Table 4.10: List of Responsibilities for Group 012 according to NOSS Levelling (2 of 10)

AREA	<b>DURIAN PLANTATION</b> Responsibilities May Includes	<b>STAR FRUIT PLANTATION</b> Responsibilities May Includes	<b>PAPAYA PLANTATION</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<b><u>Durian Plantation Senior Manager</u></b> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Provide leadership to overall durian plantation business of the company 3) Manage and advise plantation managers to improve on production yield and volume 4) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes 5) Manage and deliver assigned projects in meeting timeline, quality and budget 6) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost 7) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective	NOT AVAILABLE	NOT AVAILABLE

AREA	DURIAN PLANTATION Responsibilities May Includes	STAR FRUIT PLANTATION Responsibilities May Includes	PAPAYA PLANTATION Responsibilities May Includes
Level 5	<b><u>Durian Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarter</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>	<b><u>Star Fruit Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarter</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>	<b><u>Papaya Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarter</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>
Level 4	<b><u>Durian Plantation Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Coordinate plantation to maximise the production quality of durian</li> <li>2) Implementation and monitoring of budgets to ensure overhead costs are</li> </ol>	<b><u>Star Fruit Plantation Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Coordinate plantation to maximise the production quality of star fruit</li> <li>2) Implementation and monitoring of budgets to ensure overhead costs are</li> </ol>	<b><u>Papaya Plantation Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Coordinate plantation to maximise the production quality of papaya</li> <li>2) Implementation and monitoring of budgets to ensure overhead costs are</li> </ol>

AREA	DURIAN PLANTATION	STAR FRUIT PLANTATION	PAPAYA PLANTATION
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	<p>managed</p> <p>3) Coordinate and control of harvesting operations</p> <p>4) Heading the implementation and timely completion of upkeep work programs</p> <p>5) Managing records to ensure their accurate and up-to-date completion</p>	<p>managed</p> <p>3) Coordinate and control of harvesting operations</p> <p>4) Heading the implementation and timely completion of upkeep work programs</p> <p>5) Managing records to ensure their accurate and up-to-date completion</p>	<p>managed</p> <p>3) Coordinate and control of harvesting operations</p> <p>4) Heading the implementation and timely completion of upkeep work programs</p> <p>5) Managing records to ensure their accurate and up-to-date completion</p>
Level 3	<p><b><u>Durian Plantation Supervisor</u></b></p> <p>1) Cooperates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional plantations.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps</p>	<p><b><u>Star Fruit Plantation Supervisor</u></b></p> <p>1) Cooperates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional plantations.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps</p>	<p><b><u>Papaya Plantation Supervisor</u></b></p> <p>1) Cooperates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional plantations.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps</p>



AREA	DURIAN PLANTATION	STAR FRUIT PLANTATION	PAPAYA PLANTATION
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.	records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.	records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.
Level 2	<b><u>Durian Plantation Operator</u></b> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Operate harvesting operations	<b><u>Star Fruit Plantation Operator</u></b> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Operate harvesting operations	<b><u>Papaya Plantation Operator</u></b> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Operate harvesting operations
Level 1	<b><u>Durian Plantation General Worker</u></b> 1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters 2) Maintaining hedges and woodland 3) Maintaining vehicles and machinery 4) Cleaning and repairing buildings 5) Spreading fertiliser 6) Putting up and maintaining fences	<b><u>Star Fruit Plantation General Worker</u></b> 1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters 2) Maintaining hedges and woodland 3) Maintaining vehicles and machinery 4) Cleaning and repairing buildings 5) Spreading fertiliser 6) Putting up and maintaining fence	<b><u>Papaya Plantation General Worker</u></b> 1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters 2) Maintaining hedges and woodland 3) Maintaining vehicles and machinery 4) Cleaning and repairing buildings 5) Spreading fertiliser 6) Putting up and maintaining fences

Table 4.11: List of Responsibilities for Group 012 according to NOSS Levelling (3 of 10)

AREA	<b>PINEAPPLE PLANTATION</b> Responsibilities May Includes	<b>PITAYA (DRAGON FRUIT) PLANTATION</b> Responsibilities May Includes	<b>ORCHARD FARMING</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<b><u>Pineapple Plantation Senior Manager</u></b> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Provide leadership to overall pineapple plantation business of the company 3) Continually working with plantation managers to improve on production yield and volume 4) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes 5) Manage and deliver assigned projects in meeting timeline, quality and budget 6) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost 7) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective	NOT AVAILABLE	NOT AVAILABLE

AREA	PINEAPPLE PLANTATION Responsibilities May Includes	PITAYA (DRAGON FRUIT) PLANTATION Responsibilities May Includes	ORCHARD FARMING Responsibilities May Includes
Level 5	<b><u>Pineapple Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Present progress reports to the Head Quarters</li> <li>4) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>5) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>6) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>7) Evaluates financial statements and makes budget proposals.</li> </ol>	<b><u>Pitaya (Dragon Fruit) Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Present progress reports to the Head Quarters</li> <li>4) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>5) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>6) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>7) Evaluates financial statements and makes budget proposals.</li> </ol>	<b><u>Orchard Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</li> <li>7) Inspects orchards and fields to determine maturity dates of crops or</li> </ol>

AREA	PINEAPPLE PLANTATION Responsibilities May Includes	PITAYA (DRAGON FRUIT) PLANTATION Responsibilities May Includes	ORCHARD FARMING Responsibilities May Includes
			<p>to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>
Level 4	<b><u>Pineapple Plantation Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Coordinate plantation to maximise the production quality of pineapple</li> <li>2) Implementation and monitoring of budgets to ensure overhead costs are managed</li> <li>3) Coordinate and control of harvesting operations</li> <li>4) Heading the implementation and timely completion of upkeep work programs</li> <li>5) Managing records to ensure their accurate and up-to-date completion</li> </ol>	<b><u>Pitaya (Dragon Fruit) Plantation Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Coordinate plantation to maximise the production quality of pitaya (dragon fruit)</li> <li>2) Implementation and monitoring of budgets to ensure overhead costs are managed</li> <li>3) Coordinate and control of harvesting operations</li> <li>4) Heading the implementation and timely completion of upkeep work programs</li> <li>5) Managing records to ensure their accurate and up-to-date completion</li> </ol>	<b><u>Orchard Farm Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Planning and implementing budgets and production targets</li> <li>2) Monitoring the quality of the produce and performance of the sections including health and welfare</li> <li>3) Helping with product marketing and selling to a variety of customers</li> <li>4) Negotiating with suppliers</li> <li>5) Managing any farm diversification activities</li> <li>6) Undertaking practical work as necessary depending on the volume of work and size of the farm.</li> </ol>

AREA	PINEAPPLE PLANTATION Responsibilities May Includes	PITAYA (DRAGON FRUIT) PLANTATION Responsibilities May Includes	ORCHARD FARMING Responsibilities May Includes
Level 3	<b><u>Pineapple Plantation Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<b><u>Pitaya (Dragon Fruit) Plantation Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<b><u>Orchard Farm Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>

AREA	PINEAPPLE PLANTATION Responsibilities May Includes	PITAYA (DRAGON FRUIT) PLANTATION Responsibilities May Includes	ORCHARD FARMING Responsibilities May Includes
Level 2	<b><u>Pineapple Plantation Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Pitaya (Dragon Fruit) Plantation Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Orchard Farm Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>
Level 1	<b><u>Pineapple Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Pitaya (Dragon Fruit) Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Orchard Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>

Table 4.12: List of Responsibilities for Group 012 according to NOSS Levelling (4 of 10)

AREA	<b>CITRUS FRUITS PLANTATION</b> Responsibilities May Includes	<b>GUAVA PLANTATION</b> Responsibilities May Includes	<b>BERRIES FARMING</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	<b><u>Guava Plantation Senior Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage the strategy, conceptualization and implementation of the plantation project</li> <li>2) Provide leadership to overall guava plantation business of the company</li> <li>3) Continually working with plantation managers to improve on production yield and volume</li> <li>4) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes</li> <li>5) Manage and deliver assigned projects in meeting timeline, quality and budget</li> <li>6) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost</li> <li>7) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective</li> </ol>	<b><u>Berries Farm Senior Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage the strategy, conceptualization and implementation of the farming project</li> <li>2) Provide leadership to overall berries farming business of the company</li> <li>3) Continually working with plantation managers to improve on production yield and volume</li> <li>4) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes</li> <li>5) Manage and deliver assigned projects in meeting timeline, quality and budget</li> <li>6) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost</li> <li>7) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective</li> </ol>



AREA	CITRUS FRUITS PLANTATION	GUAVA PLANTATION	BERRIES FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
Level 5	<p><b><u>Citrus Fruits Plantation Manager</u></b></p> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarters</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>	<p><b><u>Guava Plantation Manager</u></b></p> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarters</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>	<p><b><u>Berries Farm Manager</u></b></p> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</li> <li>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</li> </ol>



AREA	CITRUS FRUITS PLANTATION Responsibilities May Includes	GUAVA PLANTATION Responsibilities May Includes	BERRIES FARMING Responsibilities May Includes
			8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics. 9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals. 10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.
Level 4	<b><u>Citrus Fruits Plantation Assistant Manager</u></b> 1) Coordinate plantation to maximise the production quality of citrus fruits 2) Implementation and monitoring of budgets to ensure overhead costs are managed 3) The coordination and control of harvesting operations 4) Heading the implementation and timely completion of upkeep work programs 5) Managing records to ensure their accurate and up-to-date completion	<b><u>Guava Plantation Assistant Manager</u></b> 1) Coordinate plantation to maximise the production quality of guava 2) Implementation and monitoring of budgets to ensure overhead costs are managed 3) The coordination and control of harvesting operations 4) Heading the implementation and timely completion of upkeep work programs 5) Managing records to ensure their accurate and up-to-date completion	<b><u>Berries Farm Assistant Manager</u></b> 1) Planning and implementing budgets and production targets 2) Monitoring the quality of the produce and performance of the sections including health and welfare 3) Keeping up to date and accurate records 4) Helping with product marketing and selling to a variety of customers 5) Negotiating with suppliers 6) Managing any farm diversification activities 7) Undertaking practical work as necessary depending on the volume of work and size of the farm.

AREA	CITRUS FRUITS PLANTATION	GUAVA PLANTATION	BERRIES FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
Level 3	<p><b><u>Citrus Fruits Plantation Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Cooperates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<p><b><u>Guava Plantation Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Cooperates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<p><b><u>Berries Farm Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Cooperates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>

AREA	CITRUS FRUITS PLANTATION Responsibilities May Includes	GUAVA PLANTATION Responsibilities May Includes	BERRIES FARMING Responsibilities May Includes
Level 2	<b><u>Citrus Fruits Plantation Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Guava Plantation Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Berries Farm Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>
Level 1	<b><u>Citrus Fruits Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Guava Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Berries Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>

Table 4.13: List of Responsibilities for Group 012 according to NOSS Levelling (5 of 10)

AREA	<b>EDIBLE NUTS PLANTATION</b> Responsibilities May Includes	<b>OIL PALM PLANTATION</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	<b><u>Oil Palm Plantation Senior Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage the strategy, conceptualization and implementation of the plantation project</li> <li>2) Provide leadership to overall oil palm plantation business of the company</li> <li>3) Continually working with plantation managers to improve on production yield and volume</li> <li>4) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes</li> <li>5) Manage and deliver assigned projects in meeting timeline, quality and budget</li> <li>6) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost</li> <li>7) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective</li> </ol>
Level 5	<b><u>Edible Nuts Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and</li> </ol>	<b><u>Oil Palm Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and</li> </ol>

AREA	<b>EDIBLE NUTS PLANTATION</b> Responsibilities May Includes	<b>OIL PALM PLANTATION</b> Responsibilities May Includes
	guidelines provided by the company 3) Provide effective leadership and motivation 4) Present progress reports to the Head Quarters 5) Review and monitor daily, weekly and monthly reports from plantation. 6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals. 7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies. 8) Evaluates financial statements and makes budget proposals.	guidelines provided by the company 3) Provide effective leadership and motivation 4) Present progress reports to the Head Quarters 5) Review and monitor daily, weekly and monthly reports from plantation. 6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals. 7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies. 8) Evaluates financial statements and makes budget proposals.
Level 4	<u><b>Edible Nuts Plantation Assistant Manager</b></u> 1) Working to maximise the production quality of edible nuts 2) Implementation and monitoring of budgets to ensure overhead costs are managed 3) The coordination and control of harvesting operations 4) Heading the implementation and timely completion of upkeep work programs 5) Managing records to ensure their accurate and up-to-date completion	<u><b>Oil Palm Plantation Assistant Manager</b></u> 1) Working to maximise the production quality of oil palm 2) Implementation and monitoring of budgets to ensure overhead costs are managed 3) The coordination and control of harvesting operations 4) Heading the implementation and timely completion of upkeep work programs 5) Managing records to ensure their accurate and up-to-date completion
Level 3	<u><b>Edible Nuts Plantation Supervisor</b></u> 1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots. 2) Determines soil use and rotation of crops. 3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules. 4) Plans and supervises the planting, cultivating, harvesting and	<u><b>Oil Palm Plantation Supervisor</b></u> 1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots. 2) Determines soil use and rotation of crops. 3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules. 4) Plans and supervises the planting, cultivating, harvesting and

AREA	<b>EDIBLE NUTS PLANTATION</b> Responsibilities May Includes	<b>OIL PALM PLANTATION</b> Responsibilities May Includes
	<p>storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</p> <p>7) Directs the repair and maintenance of farm buildings and equipment.</p>	<p>storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</p> <p>7) Directs the repair and maintenance of farm buildings and equipment.</p>
Level 2	<p><b><u>Edible Nuts Plantation Operator</u></b></p> <p>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</p> <p>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>	<p><b><u>Oil Palm Plantation Operator</u></b></p> <p>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</p> <p>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>
Level 1	<p><b><u>Edible Nuts Plantation General Worker</u></b></p> <p>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</p> <p>2) Maintaining hedges and woodland</p> <p>3) Maintaining vehicles and machinery</p> <p>4) Cleaning and repairing buildings</p> <p>5) Spreading fertiliser</p> <p>6) Putting up and maintaining fences</p>	<p><b><u>Oil Palm Plantation General Worker</u></b></p> <p>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</p> <p>2) Maintaining hedges and woodland</p> <p>3) Maintaining vehicles and machinery</p> <p>4) Cleaning and repairing buildings</p> <p>5) Spreading fertiliser</p> <p>6) Putting up and maintaining fences</p>

Table 4.14: List of Responsibilities for Group 012 according to NOSS Levelling (6 of 10)

AREA	<b>COCONUT PLANTATION</b> Responsibilities May Includes	<b>COFFEE FARMING</b> Responsibilities May Includes	<b>TEA PLANTATION</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<b><u>Coconut Senior Manager</u></b> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Continually working with plantation managers to improve on production yield and volume 3) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes 4) Manage and deliver assigned projects in meeting timeline, quality and budget 5) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost 6) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business	NOT AVAILABLE	<b><u>Tea Plantation Senior Manager</u></b> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Continually working with plantation managers to improve on production yield and volume 3) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes 4) Manage and deliver assigned projects in meeting timeline, quality and budget 5) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost 6) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective

AREA	COCONUT PLANTATION Responsibilities May Includes	COFFEE FARMING Responsibilities May Includes	TEA PLANTATION Responsibilities May Includes
	objective		
Level 5	<b><u>Coconut Plantation Manager</u></b> 1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management 2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company 3) Provide effective leadership and motivation 4) Present progress reports to the Head Quarters 5) Review and monitor daily, weekly and monthly reports from plantation. 6) Purchases machinery, equipment, and supplies, such as tractors, seed,	<b><u>Coffee Farm Manager</u></b> 1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping. 2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments. 3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops. 4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational	<b><u>Tea Plantation Manager</u></b> 1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management 2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company 3) Provide effective leadership and motivation 4) Present progress reports to the Head Quarters 5) Review and monitor daily, weekly and monthly reports from plantation. 6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.



AREA	COCONUT PLANTATION	COFFEE FARMING	TEA PLANTATION
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	<p>fertilizer, and chemicals.</p> <p>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p> <p>8) Evaluates financial statements and makes budget proposals.</p>	<p>reports.</p> <p>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</p> <p>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>	<p>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p> <p>8) Evaluates financial statements and makes budget proposals.</p>

AREA	COCONUT PLANTATION Responsibilities May Includes	COFFEE FARMING Responsibilities May Includes	TEA PLANTATION Responsibilities May Includes
Level 4	<b><u>Coconut Plantation Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Working to maximise the production quality of coconut</li> <li>2) Implementation and monitoring of budgets to ensure overhead costs are managed</li> <li>3) The coordination and control of harvesting operations</li> <li>4) Heading the implementation and timely completion of upkeep work programs</li> <li>5) Managing records to ensure their accurate and up-to-date completion</li> </ol>	<b><u>Coffee Farm Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Planning and implementing budgets and production targets</li> <li>2) Monitoring the quality of the produce and performance of the sections including health and welfare</li> <li>3) Keeping up to date and accurate records</li> <li>4) Ensuring the farm is compliant with various legal guidelines and working to minimise the environmental impact of the business, for instance via waste disposal</li> <li>5) Helping with product marketing and selling to a variety of customers</li> <li>6) Negotiating with suppliers</li> </ol>	<b><u>Tea Plantation Assistant Manager</u></b> <ol style="list-style-type: none"> <li>1) Working to maximise the production quality of tea</li> <li>2) Implementation and monitoring of budgets to ensure overhead costs are managed</li> <li>3) The coordination and control of harvesting operations</li> <li>4) Heading the implementation and timely completion of upkeep work programs</li> <li>5) Managing records to ensure their accurate and up-to-date completion</li> </ol>
Level 3	<b><u>Coconut Plantation Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> </ol>	<b><u>Coffee Farm Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of</li> </ol>	<b><u>Tea Plantation Supervisor</u></b> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> </ol>

AREA	COCONUT PLANTATION Responsibilities May Includes	COFFEE FARMING Responsibilities May Includes	TEA PLANTATION Responsibilities May Includes
	<ul style="list-style-type: none"> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ul>
Level 2	<u><b>Coconut Plantation Operator</b></u> <ul style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm</li> </ul>	<u><b>Coffee Farm Operator</b></u> <ul style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm</li> </ul>	<u><b>Tea Plantation Operator</b></u> <ul style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are</li> </ul>

AREA	COCONUT PLANTATION	COFFEE FARMING	TEA PLANTATION
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	<p>machinery and ensuring major malfunctions are reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>	<p>machinery and ensuring major malfunctions are reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>	<p>reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>
Level 1	<p><b><u>Coconut Plantation General Worker</u></b></p> <p>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</p> <p>2) Maintaining hedges and woodland</p> <p>3) Maintaining vehicles and machinery</p> <p>4) Cleaning and repairing buildings</p> <p>5) Spreading fertiliser</p> <p>6) Putting up and maintaining fences</p>	<p><b><u>Coffee Farm General Worker</u></b></p> <p>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</p> <p>2) Maintaining hedges and woodland</p> <p>3) Maintaining vehicles and machinery</p> <p>4) Cleaning and repairing buildings</p> <p>5) Spreading fertiliser</p> <p>6) Putting up and maintaining fences</p>	<p><b><u>Tea Plantation General Worker</u></b></p> <p>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</p> <p>2) Maintaining hedges and woodland</p> <p>3) Maintaining vehicles and machinery</p> <p>4) Cleaning and repairing buildings</p> <p>5) Spreading fertiliser</p> <p>6) Putting up and maintaining fences</p>

Table 4.15: List of Responsibilities for Group 012 according to NOSS Levelling (7 of 10)

AREA	<b>COCOA PLANTATION</b> Responsibilities May Includes	<b>PEPPER (PIPER NIGRUM) FARMING</b> Responsibilities May Includes	<b>CHILIES AND PEPPER FARMING (CAPSICUM spp.)</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	<b><u>Cocoa Plantation Senior Manager</u></b> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Continually working with plantation managers to improve on production yield and volume 3) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes 4) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost 5) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective	NOT AVAILABLE	NOT AVAILABLE

AREA	<b>COCOA PLANTATION</b> Responsibilities May Includes	<b>PEPPER (PIPER NIGRUM) FARMING</b> Responsibilities May Includes	<b>CHILIES AND PEPPER FARMING (CAPSICUM spp.)</b> Responsibilities May Includes
Level 5	<b><u>Cocoa Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarters</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>	<b><u>Pepper Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper</li> </ol>	<b><u>Chilies and Pepper Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper</li> </ol>

AREA	<b>COCOA PLANTATION</b> Responsibilities May Includes	<b>PEPPER (PIPER NIGRUM) FARMING</b> Responsibilities May Includes	<b>CHILIES AND PEPPER FARMING (CAPSICUM spp.)</b> Responsibilities May Includes
		<p>functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>	<p>functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>
Level 4	<p><b><u>Cocoa Plantation Assistant Manager</u></b></p> <p>1) Working to maximise the production quality of cocoa</p> <p>2) Implementation and monitoring of budgets to ensure overhead costs are managed</p> <p>3) The coordination and control of harvesting operations</p> <p>4) Heading the implementation and timely completion of upkeep work</p>	<p><b><u>Pepper Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections including health and welfare</p> <p>3) Keeping up to date and accurate records</p> <p>4) Helping with product marketing and selling to a variety of customers</p>	<p><b><u>Chilies and Pepper Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections including health and welfare</p> <p>3) Keeping up to date and accurate records</p> <p>4) Helping with product marketing and</p>

AREA	<b>COCOA PLANTATION</b> Responsibilities May Includes	<b>PEPPER (PIPER NIGRUM) FARMING</b> Responsibilities May Includes	<b>CHILIES AND PEPPER FARMING</b> <b>(CAPSICUM spp.)</b> Responsibilities May Includes
	<p>programs</p> <p>5) Managing records to ensure their accurate and up-to-date completion</p>	<p>5) Negotiating with suppliers</p> <p>6) Managing any farm diversification activities</p>	<p>selling to a variety of customers</p> <p>5) Negotiating with suppliers</p> <p>6) Managing any farm diversification activities</p>
Level 3	<p><b><u>Cocoa Plantation Supervisor</u></b></p> <p>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment,</p>	<p><b><u>Pepper Farm Supervisor</u></b></p> <p>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment,</p>	<p><b><u>Chilies and Pepper Farm Supervisor</u></b></p> <p>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment,</p>



AREA	<b>COCOA PLANTATION</b> Responsibilities May Includes	<b>PEPPER (PIPER NIGRUM) FARMING</b> Responsibilities May Includes	<b>CHILIES AND PEPPER FARMING (CAPSICUM spp.)</b> Responsibilities May Includes
	materials, and production; keeps records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.	materials, and production; keeps records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.	materials, and production; keeps records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.
Level 2	<b><u>Cocoa Plantation Operator</u></b> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Maintaining and operating harvesting operations	<b><u>Pepper Farm Operator</u></b> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Maintaining and operating harvesting operations	<b><u>Chilies and Pepper Farm Operator</u></b> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Maintaining and operating harvesting operations

AREA	<b>COCOA PLANTATION</b> Responsibilities May Includes	<b>PEPPER (PIPER NIGRUM) FARMING</b> Responsibilities May Includes	<b>CHILIES AND PEPPER FARMING (CAPSICUM spp.)</b> Responsibilities May Includes
Level 1	<b><u>Cocoa Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Pepper Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Chilies and Pepper Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>

Table 4.16: List of Responsibilities for Group 012 according to NOSS Levelling (8 of 10)

AREA	<b>NUTMEG FARMING</b> Responsibilities May Includes	<b>HELICONIA FARMING</b> Responsibilities May Includes	<b>TONGKAT ALI FARMING</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 5	<b><u>Nutmeg Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and</li> </ol>	<b><u>Heliconia Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> </ol>	<b><u>Tongkat Ali Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and</li> </ol>

AREA	NUTMEG FARMING	HELICONIA FARMING	TONGKAT ALI FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	<p>shipment for greater efficiency and accuracy.</p> <p>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>	<p>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>	<p>quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>
Level 4	<p><b><u>Nutmeg Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the</p>	<p><b><u>Heliconia Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections</p>	<p><b><u>Tongkat Ali Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections</p>

AREA	<b>NUTMEG FARMING</b> Responsibilities May Includes	<b>HELICONIA FARMING</b> Responsibilities May Includes	<b>TONGKAT ALI FARMING</b> Responsibilities May Includes
	<p>sections including health and welfare</p> <p>3) Keeping up to date and accurate records</p> <p>4) Helping with product marketing and selling to a variety of customers</p> <p>5) Negotiating with suppliers</p> <p>6) Managing any farm diversification activities.</p>	<p>including health and welfare</p> <p>3) Keeping up to date and accurate records</p> <p>4) Helping with product marketing and selling to a variety of customers</p> <p>5) Negotiating with suppliers</p> <p>6) Managing any farm diversification activities</p>	<p>including health and welfare</p> <p>3) Keeping up to date and accurate records</p> <p>4) Helping with product marketing and selling to a variety of customers</p> <p>5) Negotiating with suppliers</p> <p>6) Managing any farm diversification activities</p>
Level 3	<p><b><u>Nutmeg Farm Supervisor</u></b></p> <p>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of</p>	<p><b><u>Heliconia Farm Supervisor</u></b></p> <p>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p>	<p><b><u>Tongkat Ali Farm Supervisor</u></b></p> <p>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</p> <p>2) Determines soil use and rotation of crops.</p> <p>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</p> <p>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</p>

AREA	<b>NUTMEG FARMING</b> Responsibilities May Includes	<b>HELICONIA FARMING</b> Responsibilities May Includes	<b>TONGKAT ALI FARMING</b> Responsibilities May Includes
	<p>field and garden crops on large and complex institutional farms.</p> <p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</p> <p>7) Directs the repair and maintenance of farm buildings and equipment.</p>	<p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</p> <p>7) Directs the repair and maintenance of farm buildings and equipment.</p>	<p>5) Supervises all operations of one of the larger and more complex institutional farms.</p> <p>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</p> <p>7) Directs the repair and maintenance of farm buildings and equipment.</p>
Level 2	<p><b><u>Nutmeg Farm Operator</u></b></p> <p>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</p> <p>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>	<p><b><u>Heliconia Farm Operator</u></b></p> <p>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</p> <p>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>	<p><b><u>Tongkat Ali Farm Operator</u></b></p> <p>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</p> <p>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</p> <p>3) Preparing power tools and other attachments for safe and effective use</p> <p>4) Mixing specified materials and chemicals for application</p> <p>5) Maintaining and operating harvesting operations</p>

AREA	NUTMEG FARMING	HELICONIA FARMING	TONGKAT ALI FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
Level 1	<b><u>Nutmeg Farm General Worker</u></b> 1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters 2) Maintaining hedges and woodland 3) Maintaining vehicles and machinery 4) Cleaning and repairing buildings 5) Spreading fertiliser 6) Putting up and maintaining fences	<b><u>Heliconia Farm General Worker</u></b> 1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters 2) Maintaining hedges and woodland 3) Maintaining vehicles and machinery 4) Cleaning and repairing buildings 5) Spreading fertiliser 6) Putting up and maintaining fences	<b><u>Tongkat Ali Farm General Worker</u></b> 1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters 2) Maintaining hedges and woodland 3) Maintaining vehicles and machinery 4) Cleaning and repairing buildings 5) Spreading fertiliser 6) Putting up and maintaining fences

Table 4.17: List of Responsibilities for Group 012 according to NOSS Levelling (9 of 10)

AREA	CINNAMON AND CLOVES FARMING	RUBBER TREE PLANTATION	NIPA PALM FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	<u><b>Rubber Tree Senior Manager</b></u> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Provide leadership to overall rubber tree plantation business of the company 3) Continually working with plantation managers to improve on production yield and volume 4) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes 5) Manage and deliver assigned projects in meeting timeline, quality and budget 6) Spearhead the development of operational targets and the right strategies to strive for continuous	NOT AVAILABLE



AREA	CINNAMON AND CLOVES FARMING Responsibilities May Includes	RUBBER TREE PLANTATION Responsibilities May Includes	NIPA PALM FARMING Responsibilities May Includes
		improvement that reflects in the aspects of quality, time and cost 7) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to achieve business objective	
Level 5	<b><u>Cinnamon and Cloves Farm Manager</u></b> 1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping. 2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments. 3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops. 4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports. 5) Determines procedural changes in	<b><u>Rubber Tree Plantation Manager</u></b> 1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management 2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company 3) Provide effective leadership and motivation 4) Present progress reports to the Head Quarters 5) Review and monitor daily, weekly and monthly reports from plantation. 6) Purchases machinery, equipment, and supplies, such as tractors,	<b><u>Nipa Palm Farm Manager</u></b> 1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping. 2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments. 3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops. 4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports. 5) Determines procedural changes in drying, grading, storage, and shipment

AREA	CINNAMON AND CLOVES FARMING	RUBBER TREE PLANTATION	NIPA PALM FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	<p>drying, grading, storage, and shipment for greater efficiency and accuracy.</p> <p>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>	<p>seed, fertilizer, and chemicals.</p> <p>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p> <p>8) Evaluates financial statements and makes budget proposals.</p>	<p>for greater efficiency and accuracy.</p> <p>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>
Level 4	<p><b><u>Cinnamon and Cloves Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce</p>	<p><b><u>Rubber Tree Plantation Assistant Manager</u></b></p> <p>1) Working to maximise the production quality of rubber tree</p> <p>2) Implementation and monitoring of</p>	<p><b><u>Nipa Palm Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections including</p>

AREA	CINNAMON AND CLOVES FARMING	RUBBER TREE PLANTATION	NIPA PALM FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	<p>and performance of the sections including health and welfare</p> <ol style="list-style-type: none"> <li>3) Keeping up to date and accurate records</li> <li>4) Helping with product marketing and selling to a variety of customers</li> <li>5) Negotiating with suppliers</li> <li>6) Managing any farm diversification activities</li> </ol>	<p>budgets to ensure overhead costs are managed</p> <ol style="list-style-type: none"> <li>3) The coordination and control of harvesting operations</li> <li>4) Heading the implementation and timely completion of upkeep work programs</li> <li>5) Managing records to ensure their accurate and up-to-date completion</li> </ol>	<p>health and welfare</p> <ol style="list-style-type: none"> <li>3) Keeping up to date and accurate records</li> <li>4) Helping with product marketing and selling to a variety of customers</li> <li>5) Negotiating with suppliers</li> <li>6) Managing any farm diversification activities</li> </ol>
Level 3	<p><b><u>Cinnamon and Cloves Farm Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> </ol>	<p><b><u>Rubber Tree Plantation Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Supervising all activities in a rubber plantation for pre-planting and planting operations like clearing, lining, terracing, pitting, pit filling, planting, cover crop management, mulching, white washing, silt pit making,</li> <li>2) Responsible to disease management, weeding, fertilizer application pruning, branch induction, fencing etc.</li> <li>3) Responsible for labour management.</li> <li>4) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of</li> </ol>	<p><b><u>Nipa Palm Farm Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> </ol>

AREA	CINNAMON AND CLOVES FARMING	RUBBER TREE PLANTATION	NIPA PALM FARMING
	Responsibilities May Includes	Responsibilities May Includes	Responsibilities May Includes
	5) Supervises all operations of one of the larger and more complex institutional farms. 6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.	needs. 5) Directs the repair and maintenance of farm buildings and equipment.	5) Supervises all operations of one of the larger and more complex institutional farms. 6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs. 7) Directs the repair and maintenance of farm buildings and equipment.
Level 2	<u><b>Cinnamon And Cloves Farm Operator</b></u> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Maintaining and operating harvesting operations	<u><b>Rubber Tree Plantation Operator</b></u> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Maintaining and operating harvesting operations	<u><b>Nipa Palm Farm Operator</b></u> 1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment 2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly 3) Preparing power tools and other attachments for safe and effective use 4) Mixing specified materials and chemicals for application 5) Maintaining and operating harvesting operations

AREA	CINNAMON AND CLOVES FARMING Responsibilities May Includes	RUBBER TREE PLANTATION Responsibilities May Includes	NIPA PALM FARMING Responsibilities May Includes
Level 1	<b><u>Cinnamon and Cloves Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Rubber Tree Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Nipa Palm Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>

Table 4.18: List of Responsibilities for Group 012 according to NOSS Levelling (10 of 10)

AREA	<b>ARECA FARMING</b> Responsibilities May Includes	<b>CONIFERS PLANTATION</b> Responsibilities May Includes	<b>SAGO (RUMBIA) PALM FARMING</b> Responsibilities May Includes
Level 8	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 7	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Level 6	NOT AVAILABLE	NOT AVAILABLE	<b><u>Sago (Rumbia) Palm Farming Senior Manager</u></b> 1) Manage the strategy, conceptualization and implementation of the plantation project 2) Continually working with plantation managers to improve on production yield and volume 3) Provide technical expertise in matters pertaining to plantation sustainability mechanization, pest control and cultivation processes 4) Manage and deliver assigned projects in meeting timeline, quality and budget 5) Spearhead the development of operational targets and the right strategies to strive for continuous improvement that reflects in the aspects of quality, time and cost 6) Proactively manage changes in project scope, identify, resolve and manage operational issues and challenge to

AREA	<b>ARECA FARMING</b> Responsibilities May Includes	<b>CONIFERS PLANTATION</b> Responsibilities May Includes	<b>SAGO (RUMBIA) PALM FARMING</b> Responsibilities May Includes
			achieve business objective
Level 5	<b><u>Areca Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper</li> </ol>	<b><u>Conifers Plantation Manager</u></b> <ol style="list-style-type: none"> <li>1) Manage all phases of work from replanting, maintenance, monitor crops, ensure operational efficiency and effective labour management</li> <li>2) Plan, organize, implement and control all operations and activities within the plantation according to the practice and guidelines provided by the company</li> <li>3) Provide effective leadership and motivation</li> <li>4) Present progress reports to the Head Quarters</li> <li>5) Review and monitor daily, weekly and monthly reports from plantation.</li> <li>6) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</li> <li>7) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</li> <li>8) Evaluates financial statements and makes budget proposals.</li> </ol>	<b><u>Sago (Rumbia) Palm Farm Manager</u></b> <ol style="list-style-type: none"> <li>1) Directs and coordinates worker activities, such as planting, irrigation, chemical application, harvesting, grading, payroll, and recordkeeping.</li> <li>2) Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.</li> <li>3) Analyzes market conditions to determine acreage allocations and confers with purchasers and arranges for sale of crops.</li> <li>4) Records information, such as production, farm management practices, and parent stock, and prepares financial and operational reports.</li> <li>5) Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.</li> <li>6) Analyzes soil to determine type and quantity of fertilizer required for maximum production and inspects equipment to ensure proper</li> </ol>

AREA	<b>ARECA FARMING</b> Responsibilities May Includes	<b>CONIFERS PLANTATION</b> Responsibilities May Includes	<b>SAGO (RUMBIA) PALM FARMING</b> Responsibilities May Includes
	<p>functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies</p>		<p>functioning.</p> <p>7) Inspects orchards and fields to determine maturity dates of crops or to estimate potential crop damage from weather.</p> <p>8) Plans and directs development and production of hybrid plant varieties with high yield or disease and insect resistant characteristics.</p> <p>9) Purchases machinery, equipment, and supplies, such as tractors, seed, fertilizer, and chemicals.</p> <p>10) Hires, discharges, transfers, and promotes workers, enforces safety regulations, and interprets policies.</p>
Level 4	<p><b><u>Areca Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections including health and welfare</p> <p>3) Helping with product marketing and selling to a variety of customers</p> <p>4) Negotiating with suppliers</p> <p>5) Managing any farm diversification activities</p>	<p><b><u>Conifers Plantation Assistant Manager</u></b></p> <p>1) Working to maximise the production quality of Christmas tree/conifers</p> <p>2) Implementation and monitoring of budgets to ensure overhead costs are managed</p> <p>3) The coordination and control of harvesting operations</p> <p>4) Heading the implementation and timely completion of upkeep work programs</p>	<p><b><u>Sago (Rumbia) Farm Assistant Manager</u></b></p> <p>1) Planning and implementing budgets and production targets</p> <p>2) Monitoring the quality of the produce and performance of the sections including health and welfare</p> <p>3) Helping with product marketing and selling to a variety of customers</p> <p>4) Negotiating with suppliers</p> <p>5) Managing any farm diversification activities</p>



AREA	ARECA FARMING Responsibilities May Includes	CONIFERS PLANTATION Responsibilities May Includes	SAGO (RUMBIA) PALM FARMING Responsibilities May Includes
Level 3	<p><b><u>Areca Farm Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<p><b><u>Conifers Plantation Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>	<p><b><u>Sago (Rumbia) Farm Supervisor</u></b></p> <ol style="list-style-type: none"> <li>1) Coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.</li> <li>2) Determines soil use and rotation of crops.</li> <li>3) Advise project leaders on problems; requisitions equipment and materials; approves work schedules.</li> <li>4) Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.</li> <li>5) Supervises all operations of one of the larger and more complex institutional farms.</li> <li>6) Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.</li> <li>7) Directs the repair and maintenance of farm buildings and equipment.</li> </ol>

AREA	<b>ARECA FARMING</b> Responsibilities May Includes	<b>CONIFERS PLANTATION</b> Responsibilities May Includes	<b>SAGO (RUMBIA) PALM FARMING</b> Responsibilities May Includes
Level 2	<b><u>Areca Farm Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Conifers Plantation Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>	<b><u>Sago (Rumbia) Farm Operator</u></b> <ol style="list-style-type: none"> <li>1) Operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment</li> <li>2) Adjusting and repairing farm machinery and ensuring major malfunctions are reported promptly</li> <li>3) Preparing power tools and other attachments for safe and effective use</li> <li>4) Mixing specified materials and chemicals for application</li> <li>5) Maintaining and operating harvesting operations</li> </ol>
Level 1	<b><u>Areca Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Conifers Plantation General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>	<b><u>Sago (Rumbia) Farm General Worker</u></b> <ol style="list-style-type: none"> <li>1) Planting, tending and harvesting crops using a variety of equipment such as tractors and combine harvesters</li> <li>2) Maintaining hedges and woodland</li> <li>3) Maintaining vehicles and machinery</li> <li>4) Cleaning and repairing buildings</li> <li>5) Spreading fertiliser</li> <li>6) Putting up and maintaining fences</li> </ol>

#### 4.5 MAPPING OS vs AVAILABLE NOSS

Table 4.19: OS vs Existing NOSS (1 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING					
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES					
GROUP	(012) GROWING OF PERENNIAL CROPS					
AREA	Grapes Farming	Banana Plantation	Mango Plantation	Durian Plantation	Star Fruit Plantation	Papaya Plantation
LEVEL 8	Not Available	Banana Plantation Technologist	Not Available	Durian Plantation Technologist	Not Available	Not Available
LEVEL 7	Not Available	Banana Plantation General Manager	Not Available	Durian Plantation General Manager	Not Available	Not Available
LEVEL 6	Not Available	Banana Plantation Senior Manager	Not Available	Durian Plantation Senior Manager	Not Available	Not Available
LEVEL 5	Grapes Farm Manager	Banana Plantation Manager	Mango Plantation Manager	Durian Plantation Manager	Star Fruit Plantation Manager	Papaya Plantation Manager
LEVEL 4	Grapes Farm Assistant Manager	Banana Plantation Assistant Manager	Mango Plantation Assistant Manager	Durian Plantation Assistant Manager	Star Fruit Plantation Assistant Manager**	Papaya Plantation Assistant Manager
LEVEL 3	Grapes Farm Supervisor	Banana Plantation Supervisor	Mango Plantation Supervisor	Durian Plantation Supervisor	Star Fruit Plantation Supervisor	Papaya Plantation Supervisor
LEVEL 2	Grapes Farm Operator	Banana Plantation Operator	Mango Plantation Operator	Durian Plantation Operator	Star Fruit Plantation Operator	Papaya Plantation Operator
LEVEL 1	Grapes Farm General Worker	Banana Plantation General Worker	Mango Plantation General Worker	Durian Plantation General Worker	Star Fruit Plantation General Worker	Papaya Plantation General Worker

Table 4.20: OS vs Existing NOSS (2 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING			
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES			
GROUP	(012) GROWING OF PERENNIAL CROPS			
AREA	Pineapple Plantation	Pitaya (Dragon Fruit) Plantation	Orchard Farming (Rambutan, Ciku, Duku, Duku Langsat, Langsat, Dokong, Cempedak, Kedondong, Durian Belanda, Salak, Pulasan, Longan, Mata Kucing, Jackfruit, Mangosteen And Avocado)	Citrus Fruits Plantation (Pomelo, Lemon & Limes, Tangerines & Mandarin)
LEVEL 8	Pineapple Plantation Technologist	Not Available	Not Available	Not Available
LEVEL 7	Pineapple Plantation General Manager	Not Available	Not Available	Not Available
LEVEL 6	Pineapple Plantation Senior Manager	Not Available	Not Available	Not Available
LEVEL 5	Pineapple Plantation Manager	Pitaya (Dragon Fruit) Plantation Manager	Orchard Farm Manager	Citrus Fruits Plantation Manager
LEVEL 4	A012-001-4:2017	Pitaya (Dragon Fruit) Plantation Assistant Manager	Orchard Farm Assistant Manager	Citrus Fruits Plantation Assistant Manager
LEVEL 3	AF-016-3:2014	Pitaya (Dragon Fruit) Plantation Supervisor	Orchard Farm Supervisor	Citrus Fruits Plantation Supervisor
LEVEL 2	Embedded to Level 3	Pitaya (Dragon Fruit) Plantation Operator	Orchard Farm Operator	Citrus Fruits Plantation Operator
LEVEL 1	Embedded to Level 3	Pitaya (Dragon Fruit) Plantation General Worker	Orchard Farm General Worker	Citrus Fruits Plantation General Worker

Table 4.21: OS vs Existing NOSS (3 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING			
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES			
GROUP	(012) GROWING OF PERENNIAL CROPS			
AREA	Guava Plantation	Berries Farming (Strawberries, Blueberries, Kiwi & Other Berries)	Oil Palm Plantation	Coconut Plantation
LEVEL 8	Not Available	Not Available	Oil Palm Plantation Technologist	Coconut Plantation Technologist**
LEVEL 7	Not Available	Not Available	Oil Palm Plantation General Manager	Coconut Plantation General Manager
LEVEL 6	Guava Plantation Senior Manager	Berries Farm Senior Manager	Oil Palm Plantation Senior Manager	Coconut Plantation Senior Manager
LEVEL 5	Guava Plantation Manager	Berries Farm Manager	RB-081-5:2012	Coconut Plantation Manager
LEVEL 4	Guava Plantation Assistant Manager	Berries Farm Assistant Manager	RB-081-4:2012	Coconut Plantation Assistant Manager
LEVEL 3	Guava Plantation Supervisor	Berries Farm Supervisor	RB-081-3:2012	Coconut Plantation Supervisor
LEVEL 2	Guava Plantation Operator	Berries Farm Operator	Embedded to Level 3	Coconut Plantation Operator
LEVEL 1	Guava Plantation General Worker	Berries Farm General Worker	Embedded to Level 3	Coconut Plantation General Worker

Table 4.22: OS vs Existing NOSS (4 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING			
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES			
GROUP	(012) GROWING OF PERENNIAL CROPS			
AREA	Coffee Farming	Tea Plantation	Cocoa Plantation	Pepper (Piper Nigrum) Farming
LEVEL 8	Not Available	Tea Plantation Technologist	Not Available	Not Available
LEVEL 7	Not Available	Tea Plantation General Manager	Not Available	Not Available
LEVEL 6	Not Available	Tea Plantation Senior Manager	Cocoa Plantation Senior Manager	Not Available
LEVEL 5	Coffee Farm Manager	Tea Plantation Manager	Cocoa Plantation Manager	Pepper (Piper Nigrum) Farm Manager
LEVEL 4	Coffee Farm Assistant Manager	Tea Plantation Assistant Manager	Cocoa Plantation Assistant Manager	Pepper (Piper Nigrum) Farm Assistant Manager
LEVEL 3	Coffee Farm Supervisor	Tea Plantation Supervisor	Cocoa Plantation Supervisor	Pepper (Piper Nigrum) Farm Supervisor
LEVEL 2	Coffee Farm Operator	Tea Plantation Operator	Cocoa Plantation Operator	Pepper (Piper Nigrum) Farm Operator
LEVEL 1	Coffee Farm General Worker	Tea Plantation General Worker	Cocoa Plantation General Worker	Pepper (Piper Nigrum) Farm General Worker

Table 4.23: OS vs Existing NOSS (5 of 6)

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING				
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES				
GROUP	(012) GROWING OF PERENNIAL CROPS				
AREA	Chilies and Pepper Farming (Capsicum Spp.)	Nutmeg Farming	Heliconia Farming	Tongkat Ali Farming	Cinnamon and Cloves Farming
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	Not Available	Not Available	Not Available	Not Available	Not Available
LEVEL 5	Chilies and Pepper Farm Manager	Nutmeg Farm Manager	Heliconia Farm Manager	Tongkat Ali Farm Manager	Cinnamon and Cloves Farm Manager
LEVEL 4	Chilies and Pepper Farm Assistant Manager	Nutmeg Farm Assistant Manager	Heliconia Farm Assistant Manager	Tongkat Ali Farm Assistant Manager	Cinnamon and Cloves Farm Assistant Manager
LEVEL 3	Chilies and Pepper Farm Supervisor	Nutmeg Farm Supervisor	Heliconia Farm Supervisor	Tongkat Ali Farm Supervisor	Cinnamon and Cloves Farm Supervisor
LEVEL 2	Chilies and Pepper Farm Operator	Nutmeg Farm Operator	Heliconia Farm Operator	Tongkat Ali Farm Operator	Cinnamon and Cloves Farm Operator
LEVEL 1	Chilies and Pepper Farm General Worker	Nutmeg Farm General Worker	Heliconia Farm General Worker	Tongkat Ali Farm General Worker	Cinnamon and Cloves Farm General Worker

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

SECTION	(A) AGRICULTURE, FORESTRY AND FISHING				
DIVISION	(01) CROPS AND ANIMAL PRODUCTION, HUNTING AND RELATED SERVICE ACTIVITIES				
GROUP	(012) GROWING OF PERENNIAL CROPS				
AREA	Rubber Tree Plantation	Nipa Palm Farming	Areca Farming	Conifers Plantation	Sago (Rumbia) Palm Plantation
LEVEL 8	Rubber Tree Plantation Technologist	Not Available	Not Available	Not Available	Sago (Rumbia) Plantation Technologist
LEVEL 7	Rubber Tree Plantation General Manager	Not Available	Not Available	Not Available	Sago (Rumbia) Plantation General Manager
LEVEL 6	Rubber Tree Plantation Senior Manager	Not Available	Not Available	Not Available	Sago (Rumbia) Plantation Senior Manager
LEVEL 5	Rubber Tree Plantation Manager	Nipa Palm Farm Manager	Areca Farm Manager	Conifers Plantation Manager	Sago (Rumbia) Plantation Senior Manager
LEVEL 4	Rubber Tree Plantation Assistant Manager	Nipa Palm Farm Assistant Manager	Areca Farm Assistant Manager	Conifers Plantation Assistant Manager	Sago (Rumbia) Plantation Manager
LEVEL 3	RB-015-3	Nipa Palm Farm Supervisor	Areca Farm Supervisor	Conifers Plantation Supervisor	Sago (Rumbia) Plantation Assistant Manager
LEVEL 2	RB-015-2	Nipa Palm Farm Operator	Areca Farm Operator	Conifers Plantation Operator	Sago (Rumbia) Plantation Supervisor
LEVEL 1	Rubber Tree Plantation General Worker	Nipa Palm Farm General Worker	Areca Farm General Worker	Conifers Plantation General Worker	Sago (Rumbia) Plantation Operator



#### **4.6 Occupational Description (OD)**

Occupational 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 industry representatives from focus group.

#### **4.7 Skills in Demand**

The findings on this sub topic are discussed in sub topic 4.2.

#### **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 responsibilities of each job titles are listed according to competency levels as to give the overall picture of the job scope and as a guide to determine NOSS development in the future. The similarity of job scope may give the indication that the skill set is the same and the job areas may be merged for NOSS development.

The 7 existing NOSS have been mapped with the OS. there are only 3 areas covered pineapple, oil palm and rubber plantation. These NOSS are in dire need to be reviewed and respond to the current industry needs of skilled workers.

## CHAPTER 5:

### DISCUSSION, RECOMMENDATION AND CONCLUSION

#### 5.1 Discussion

Based on the findings obtained throughout the Occupational Analysis on the industry, 28 job areas with 167 job 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.

Discussion on key issues revolving around the industry is summarised as follow:

No.	Key Issues	Discussion	Suggestion
1.	Insufficient manpower	<ul style="list-style-type: none"> <li>• Demanding work condition</li> <li>• 3D (Dirty, Dangerous, Difficult)</li> <li>• Unattractive wages and fringe benefits</li> <li>• Negative perception by community – agriculture as backward</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum wage policy</li> <li>• Review wages scheme on productivity based</li> </ul>
2.	Low skilled and low performance workforce	<ul style="list-style-type: none"> <li>• Lack of training facilities and talent management from the employees</li> <li>• Low motivation and rewards</li> </ul>	Government Incentives and Intervention
3.	High dependency on foreign labour	<ul style="list-style-type: none"> <li>• 3D (Dirty, Dangerous, Difficult)</li> <li>• Reliable and favourable for higher productivity than local workers</li> <li>• Inability to convince young generation to participate in plantation sector</li> </ul>	Both government and private sector should give concerted and continuous effort in controlling the intake of foreign labours and attract more locals.
4.	Underpayment of wages lead to high turn over	Salary wages does not match with productivity and job requirements.	Profit sharing – changing the mindset of the managerial to create harmonise salary scheme.
5.	Low quality produce-Quality Control	Low productivity and quality	<ul style="list-style-type: none"> <li>• Quality enhancement by upgrading more skilful workers.</li> <li>• SOP enforcement by private sector.</li> </ul>

No.	Key Issues	Discussion	Suggestion
6.	Maintaining profitability	<ul style="list-style-type: none"> <li>• Commodity is price receiver</li> <li>• Uncertainty of commodity price</li> <li>• Instability of input price (high cost of production)</li> </ul>	Government intervention on policy and strengthening plantation management.
7.	Economic conditions	Low farm gate price of commodity.	<ul style="list-style-type: none"> <li>• Enforcement from related government agencies</li> <li>• Diversification economic activities</li> <li>• Integration crops management strategies</li> </ul>
8.	Government policy/regulation	<ul style="list-style-type: none"> <li>• Frequently changing of government policies and incentives.</li> <li>• Various taxation enforcement on commodity.</li> </ul>	Reviewing irrelevant and unfavourable taxation.
9.	Labour costs (sub-contractors)	<ul style="list-style-type: none"> <li>• Too high commission percentage.</li> <li>• Intense outsourcing contractors in plantation activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Direct contracts awards</li> <li>• Improvement of procurement procedure</li> </ul>
10.	Technological change	<ul style="list-style-type: none"> <li>• Slow technological innovation and adoption</li> <li>• Lack of capital investment</li> </ul>	Financial facilities by public fund with incentives.
11.	Resistance to change among industry players	<ul style="list-style-type: none"> <li>• Uneconomical farm size</li> <li>• Attitude and perception</li> <li>• Poor technology adoption and advancement</li> </ul>	Strengthening land consolidation and corporation establishment.
12.	Youth Involvement	<ul style="list-style-type: none"> <li>• Poor technology adoption and advancement</li> <li>• Negative perception</li> </ul>	<ul style="list-style-type: none"> <li>• Enhancement of awareness and promotional activity</li> <li>• Integration of skill training and learning</li> </ul>
13.	Lack of infrastructure support	Incomplete supply chain.	Government policies and intervention together with proactive involvement of the industry players.
14.	Insufficient good planting materials	<ul style="list-style-type: none"> <li>• Dissemination of planting materials</li> <li>• Low production of good planting materials</li> </ul>	Research & Development activities by relevant stakeholders.
15.	Poor facilities and amenities for plantation workers	A direct impact of high workers turnover and labour shortages.	Industry players need to upgrade facilities and amenities for plantation workers.
16.	Insufficient of extension officer services	Ratio of extension agents to coverage area is imbalance which lead to less training and monitoring of farmers and growers,	Government policies and intervention.

## **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 discussions, 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 job areas that are in demand and have not been developed.
- ii) To encourage apprenticeship training (National Dual Training System – NDTs) for the related job areas.
- iii) Promote certification of existing and experienced personnel in the sector through Recognition via Prior Achievements (Pengiktirafan Pencapaian Terdahulu – PPT).

## **5.3 Conclusion**

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

### **Objective 1: Occupational Structure**

The findings and discussions with expert panel members from various organizations, a total of 28 job areas and 167 job titles have been identified. By planning and conducting the training and certification of this job area 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:

- Data collection and sorting abilities
- Communication ability
- Plantation knowledge
- Decision making ability
- General attitude towards work (commitment, resourcefulness, teamwork, etc.)
- Diagnostic ability
- Troubleshooting / problem solving ability
- Strong technical prediction / manual dexterity
- Competent in using software and technology / other mechanical devices
- English language proficiency
- Leadership
- Managerial Skill (risk management etc.)
- Prediction and Forecasting ability
- Financial and Accounting Management
- Human Relation and Talent Management
- Knowledge of Rules and Legislation related to Plantation Industry

General attitude towards work, communication ability and leadership are the top 3 skill in demand for low skilled worker. While troubleshooting / problem solving skills, General attitude towards work, and Financial and Accounting Management are the top 3 skills in high demand for high skilled worker by the industry. The skills above are encouraged to be included in the training curriculum according to the respective areas.

## Critical Job Titles

The respondents and Focus Group Discussion members have reviewed the list and specified the critical job titles as in the table below. The list is arranged according to level of priority in term of urgency to fill up the manpower shortage.

Table 5.1: List of Critical Job Titles

No.	Critical Job Title	Group/Area	Level
1.	Oil Palm Plantation Supervisor	012/ Oleaginous Fruits	3
2.	Oil Palm Plantation Operator	012/ Oleaginous Fruits	2
3.	Rubber Plantation Supervisor	012/ Other Perennial Crops	3
4.	Rubber Plantation Operator	012/ Other Perennial Crops	2
5.	Cocoa Plantation Supervisor	012/ Beverage Crops	3
6.	Cocoa Plantation Operator	012/ Beverage Crops	2
7.	Pepper (Piper Nigrum) Farming Supervisor	012/ Spices, Aromatic, Drugs and Pharmaceutical Crops	3
8.	Pepper (Piper Nigrum) Farming Operator	012/ Spices, Aromatic, Drugs and Pharmaceutical Crops	2
9.	Chilies and Pepper Farming Supervisor	012/ Spices, Aromatic, Drugs and Pharmaceutical Crops	3
10.	Chilies and Pepper Farming Operator	012/ Spices, Aromatic, Drugs and Pharmaceutical Crops	2
11.	Sago (Rumbia) Plantation Supervisor	012/ Other Perennial Crops	3
12.	Sago (Rumbia) Plantation Operator	012/ Other Perennial Crops	2
13.	Pineapple Plantation Supervisor	012/ Tropical and subtropical fruit	3
14.	Pineapple Plantation Operator	012/ Tropical and subtropical fruit	2
15.	Durian Plantation Supervisor	012/ Tropical and subtropical fruit	3
16.	Durian Plantation Operator	012/ Tropical and subtropical fruit	2
17.	Coconut Plantation Supervisor	012/ Oleaginous	3

No.	Critical Job Title	Group/Area	Level
		Fruits	
18.	Coconut Plantation Operator	012/ Oleaginous Fruits	2
19.	Coffee Plantation Supervisor	012/ Beverage Crops	3
20.	Coffee Plantation Operator	012/ Beverage Crops	2
21.	Tea Plantation Supervisor	012/ Beverage Crops	3
22.	Tea Plantation Operator	012/ Beverage Crops	2
23.	Banana Plantation Supervisor	012/Tropical and subtropical fruit	3
24.	Banana Plantation Operator	012/ Tropical and subtropical fruit	2
25.	Mango Plantation Supervisor	012/ Tropical and subtropical fruit	3
26.	Mango Plantation Operator	012/ Tropical and subtropical fruit	2
27.	Orchard Farming Supervisor	012/ Tropical and subtropical fruit	3
28.	Orchard Farming Operator	012/ Tropical and subtropical fruit	2
29.	Guava Plantation Supervisor	012/ Pome fruits and Stone fruits	3
30.	Guava Plantation Operator	012/ Pome fruits and Stone fruits	2
31.	Star Fruit Plantation Supervisor	012/ Tropical and subtropical fruit	3
32.	Star Fruit Plantation Operator	012/ Tropical and subtropical fruit	2
33.	Papaya Plantation Supervisor	012/ Tropical and subtropical fruit	3
34.	Papaya Plantation Operator	012/ Tropical and subtropical fruit	2

### Overall Conclusion

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

The priority to fill up the critical job titles belong to commodity crops such as Oil Palm, Rubber, Cocoa, Pepper (*Piper Nigrum*) and Sago (*Rumbia*). The NOSS development should focus on these commodity crops job areas.

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 job area of growing perennial crops towards enhancing the industry by upgrading the reputation of agricultural economic activities and attract more local manpower.



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## **ANNEX 1: MOSQF LEVEL DESCRIPTORS**

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

<b>Level</b>	<b>Level Description</b>
<b>8</b>	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.
<b>7</b>	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.
<b>6</b>	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.
<b>5</b>	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address broadly-defined, complex problems. It includes taking responsibility for planning and developing courses of action as well as exercising autonomy and judgment within broad parameters. It also reflects understanding of different perspectives, approaches or schools of thought and the reasoning behind them.
<b>4</b>	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address problems that are well defined but complex and non-routine. It includes taking responsibility for overall courses of action as well as exercising autonomy and judgment within fairly broad parameters. It also reflects understanding of different perspective or approaches within a sub-area of study or work.
<b>3</b>	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to complete task and address problems that are well defined with a measure of complexity. It includes taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgments within limited parameter. It also reflects awareness of different perspectives or approaches within a sub-area of study or work.
<b>2</b>	Achievement at this level reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problem. It includes taking responsibility for

	completing tasks and procedures, and exercising autonomy and judgment subject to overall direction or guidance.
1	Achievement at this level reflects the ability to use relevant knowledge, skills and procedures to complete routine and predictable tasks that include responsibility for completing tasks and procedures subject to direction or guidance.

## **ANNEX 2: LIST OF CONTRIBUTORS**

**LIST OF SECTOR PANEL MEMBERS FOR THE GROWING OF COMMODITY  
PERENNIAL CROPS SECTOR FRAMEWORK DEVELOPMENT**

<b>NO</b>	<b>NAME</b>	<b>EXPERTISE</b>	<b>POSITION</b>	<b>ORGANISATION</b>
1	Dr. Rozita Binti Osman	Cocoa Plantation	Researcher	Malaysian Cocoa Board
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3	En. Shaardan Bin Sharif	Rubber Plantation	Senior Manager	Malaysian Rubber Board
4	Tn. Hj. Khairani Bin Mohd	Crops Management	Managing Director	KHM Farm Sdn Bhd
5	En. Unjah Anak Awit	Pepper Farming	Economy Affair Officer	Malaysian Pepper Board

### LIST OF OCCUPATIONAL FRAMEWORK TECHNICAL EVALUATION COMMITTEE

NO.	NAME	ORGANISATION
1.	Dato' Syed Abdul Rahman Bin Syed Abdul Rashid	Managing Director Agro Almashoor Sdn Bhd
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### 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	Abu Musa Bin Mohamad Isa	Facilitator/ Researcher
5	Akhsan Kamil Azizi Bin Lokman Hakim	Researcher



## **ANNEX 3: QUESTIONNAIRE**

## **Growing of Perennial Crops Industry Occupational Framework Survey**

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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:

**Akhsan Kamil Azizi Bin Lokman Hakim: [akhsan199@gmail.com](mailto:akhsan199@gmail.com)**

### **Survey Respondent Details**

Name :

Position :

Organisation :

Date :

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

## SECTION 1: COMPETENCY IN DEMAND

**2.1** Listed below are set of skills related to personnel involve in **growing of perennial crops**. 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	Semi-Skilled Workers	High Skilled Workers
1	Data collection and sorting abilities		
2	Communication ability		
3	Plantation knowledge		
4	Decision making ability		
5	General attitude towards work (commitment, resourcefulness, teamwork, etc.)		
6	Diagnostic ability		
7	Troubleshooting / problem solving ability		
8	Strong technical predilection / manual dexterity		
9	Competent in using software and technology / other mechanical devices		
10	English language proficiency		
11	Leadership		
12	Managerial Skill (risk management etc.)		
13	Prediction and Forecasting ability		
14	Financial and Accounting Management		
15	Human Relation and Talent Management		
16	Knowledge of Rules and Legislation related to Plantation Industry		

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

☐ Yes

☐ No

**2.3** What is/are the reason/s for the skills void? 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: .....

**2.4** What is/are solution/s for the skills void 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 growing of perennial crops industry?**

Tick (√) where applicable.

Category of Skills	Description
<b>Skilled Workers</b>	Supervisor, Assistant Managers, Managers, Technologist
<b>Semi-Skilled Workers</b>	Plantation Operator, General Workers

No.	Job Areas & Category of Skills	High Shortage	Mid Shortage	Low Shortage	No Shortage
1	<b>Growing of perennial crops</b>				
	a) Skilled Workers				
	b) Semi-Skilled Workers				
	c) Low Skilled Workers				

## SECTION 3: EMERGING SKILLS

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

**3.1** Do you think Industry Revolution 4.0 (Digitalisation) (IR4.0) would give an influence to the economic activities of growing of perennial crops industry?

☐ Yes

☐ No

☐ Not sure

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

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

NO.	TECHNOLOGY DRIVES / PILLARS	JOB AREAS
		Growing of Perennial Crops
1	<b>Autonomous Robots</b> (coordinated and automated actions of robots to complete tasks intelligently, with minimal human input)	
2	<b>Big Data Analytics</b> (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	<b>Cloud Computing</b> (storing and accessing data and programs over the Internet instead of your computer's hard drive)	
4	<b>Internet of Things (IoT)</b> (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	<b>Additive Manufacturing (3D Printing)</b> (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	<b>System Integration</b> (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	<b>Cybersecurity</b> (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	<b>Augmented Reality</b> (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	<b>Simulation</b> (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
<b>DETAILS</b>	<ul style="list-style-type: none"> <li>▪ Basic Information Technology knowledge</li> <li>▪ Ability to use and interact with computers and smart machines like robots, tablets etc.</li> <li>▪ Understanding machine to machine communication, IT security &amp; data protection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ability to process and analyze data and information obtained from machines</li> <li>▪ Understanding visual data output &amp; making decisions</li> <li>▪ Basic statistical knowledge</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inter-disciplinary &amp; generic knowledge about technology</li> <li>▪ Specialized knowledge about manufacturing activities and processes in place</li> <li>▪ Technical know-how of machines to carry out maintenance related activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adaptability &amp; ability to change</li> <li>▪ Decision making</li> <li>▪ Working in team</li> <li>▪ Communication skills</li> <li>▪ Mindset change for lifelong learning</li> </ul>

No.	Job Areas	IMPORTANT PREREQUISITE AND SKILLS FOR IR4.0			
		KNOWLEDGE ABOUT ICT	ABILITY TO WORK WITH DATA	TECHNICAL KNOW-HOW	PERSONAL SKILLS
1	Growing of Perennial crops				



## SECTION 4: RELATED ISSUES

### 4.1 What is/are the key issue/s related to growing of perennial crops industry?

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

1	2	3	4
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>

NO.	KEY ISSUES	JOB AREAS
		Growing of Perennial Crops
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)	

\*\*\*End of Questionnaire \*\*

**ANNEX 4:**  
**OCCUPATIONAL DESCRIPTIONS (OD)**

**SECTION : (A) AGRICULTURE, FORESTRY AND FISHING**  
**DIVISION : (01) CROPS AND ANIMAL PRODUCTION, HUNTING AND**  
**RELATED SERVICE ACTIVITIES**  
**GROUP : (012) GROWING OF PERENNIAL CROPS**

**MSIC GROUP : 012**

**AREA : OIL PALM PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Oil Palm Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Oil Palm Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : OIL PALM PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Oil Palm Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Oil Palm Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : RUBBER TREE PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Rubber Tree Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Rubber Tree Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations



**MSIC GROUP : 012**

**AREA : RUBBER TREE PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Rubber Tree Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Rubber Tree Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : COCOA PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Cocoa Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Cocoa Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : COCOA PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Cocoa Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Cocoa Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : PEPPER (PIPER NIGRUM) FARMING**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Pepper (Piper Nigrum) Farming Supervisor is responsible to coordinate with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Pepper (Piper Nigrum) Farming and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : PEPPER (PIPER NIGRUM) FARMING**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Pepper (Piper Nigrum) Farming Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Pepper (Piper Nigrum) Farming and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : CHILIES AND PEPPER FARMING (CAPSICUM SPP.)**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Chilies and Pepper Farming (Capsicum Spp.) Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Chilies and Pepper Farming (Capsicum Spp.) Farming and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.



**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : CHILIES AND PEPPER FARMING (CAPSICUM SPP.)**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Chilies and Pepper Farming (Capsicum Spp.) Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Chilies and Pepper Farming (Capsicum Spp.) and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : SAGO RUMBIA PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Sago (Rumbia) Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Sago (Rumbia) Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : SAGO RUMBIA PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Sago (Rumbia) Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Sago (Rumbia) Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : PINEAPPLE PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Pineapple Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Pineapple Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : PINEAPPLE PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Pineapple Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Pineapple Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations



**MSIC GROUP : 012**

**AREA : DURIAN PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Durian Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Durian Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : DURIAN PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Durian Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Durian Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : COCONUT PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Coconut Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Coconut Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : COCONUT PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Coconut Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Coconut Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : COFFEE PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Coffee Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Coffee Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations



**MSIC GROUP : 012**

**AREA : COFFEE PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Coffee Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Coffee Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : TEA PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Tea Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Tea Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**  
**AREA : TEA PLANTATION**  
**LEVEL : 2**

## **RESPONSIBILITIES**

The Tea Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

### **Knowledge:**

- Knowledge of Tea Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : BANANA PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Banana Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

### **Knowledge:**

- Knowledge of Banana Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : BANANA PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Banana Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Banana Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : MANGO PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Mango Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Mango Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.



**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : MANGO PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Mango Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Mango Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : ORCHARD FARMING**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Orchard Farming Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Orchard Farming and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : ORCHARD FARMING**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Orchard Farming Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Orchard Farming and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : GUAVA PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Guava Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Guava Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : GUAVA PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Guava Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Guava Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations



**MSIC GROUP : 012**

**AREA : STAR FRUIT PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Star Fruit Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Star Fruit Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : STAR FRUIT PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Star Fruit Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Star Fruit Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations

**MSIC GROUP : 012**

**AREA : PAPAYA PLANTATION**

**LEVEL : 3**

### **RESPONSIBILITIES**

The Papaya Plantation Supervisor is responsible to coordinates with administrators and research project leaders on work plans and programs and makes recommendations for improvements, land preparation, fertilizing, planting crops, cultivation, and harvesting of experimental feed plots.

#### **Knowledge:**

- Knowledge of Papaya Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of principles and processes for providing customer and personal services
- Company safety, rules and regulations
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods

#### **Skills:**

- Determines soil use and rotation of crops.
- Advise project leaders on problems; requisitions equipment and materials; approves work schedules.
- Plans and supervises the planting, cultivating, harvesting and storing of field and garden crops on large and complex institutional farms.
- Supervises all operations of one of the larger and more complex institutional farms.
- Makes reports on time, equipment, materials, and production; keeps records and prepares estimates of needs.
- Directs the repair and maintenance of farm buildings and equipment.

**Attributes (Attitude/Safety/Environmental):**

- Possess strong interpersonal skills with good attention to details
- Possess high commitment and have a boundless enthusiasm
- Possess good judgment and decision making
- Ability to work under pressure and strong team player
- Adhere to safety regulations
- Adhere to environmental regulations

**MSIC GROUP : 012**

**AREA : PAPAYA PLANTATION**

**LEVEL : 2**

### **RESPONSIBILITIES**

The Papaya Plantation Operator is responsible to operating or tending equipment used in agricultural production, such as tractors, combines, and irrigation equipment

#### **Knowledge:**

- Knowledge of Papaya Plantation and other crops
- Knowledge of techniques and equipment for planting and growing including storage/handling techniques
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of materials, methods, and the tools involved in the construction
- Company safety, rules and regulations

#### **Skills:**

- Adjusting and repairing plantation machinery and ensuring major malfunctions are reported promptly
- Preparing power tools and other attachments for safe and effective use
- Mixing specified materials and chemicals for application
- Maintaining and operating harvesting operations

#### **Attributes (Attitude/Safety/Environmental):**

- Possess strong motivational and a team player
- Possess strong interpersonal skills with good attention to details
- Ability to reliable, responsible, and dependable, and fulfilling obligations
- Ability to think creative and alternative thinking to develop new ideas for and answers to work-related problems
- Ability to work under pressure and strong team player
- Adhere to safety regulations and environmental regulations