

# Labour Requirement in the Oil Palm Independent Smallholder Sector in Sabah and Sarawak, Malaysia

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## ABSTRACT

*Labour requirement in the smallholder sector, especially independent smallholders, is different from those in the estate sector because of the different total area and management level. The study aims to estimate the labour requirement for harvesting and fresh fruit bunch (FFB) collection activity in the oil palm independent smallholder sector in Sabah and Sarawak in 2016. The study focuses on the harvesting and FFB collection activity due to the fact that the activity is very important and it determines the income earned by independent smallholders. For data collection, face-to-face interviews were conducted using close-ended questionnaires involving 397 and 392 independent smallholders in Sabah and Sarawak, respectively, and were randomly selected. The study found that the average age of the respondents in Sabah and Sarawak were 52 and 54, respectively, and at this age level, they needed to hire workers to do heavy work such as FFB harvesting and collection. Total labour requirements in the oil palm independent smallholder sector in Sabah and Sarawak were estimated at 7837 and 4807 workers, respectively. Altogether, total labour requirement for harvesting and FFB collection in both states was 12 644 workers.*

**Keywords:** Labour, Oil Palm, Independent Smallholders, Sabah, Sarawak.

## INTRODUCTION

The oil palm industry in Malaysia plays an important role in the country's economic growth. Its contribution to the country's export revenue comes from many palm oil products, which has increased to RM 67.6 billion in 2016 as compared to only RM

10.97 billion in 1995 (PORLA, 1996; MPOB, 2017a). The increase in the export revenue was mostly a result of growth in export quantity and also the increase in the price of exported products. This development will not only benefit the oil palm planters in the independent sector, government agencies and smallholders, but will

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also benefit the country.

A high demand for palm oil products has encouraged new entrepreneurs to venture into this industry. This is evident as the area of oil palm plantations has increased year by year. The area of oil palm plantation was only 2.54 million ha in 1995, but surged to 5.74 million ha in 2016 (Table 1). From that total in 2016, 3 508 554 ha or 61.2% were managed by the independent sector, 951 169 ha (16.5%) by government schemes, 344 314 ha (6.0%) by State Governments or Government agencies and 933 948 ha (16.3%) by independent smallholders.

In Malaysia, the smallholder sectors are divided into two (2) sectors, *i.e.* smallholders under the supervision of FELDA, RISDA, FELCRA and State Land Scheme; and independent smallholders. The oil palm planting area of the independent smallholder sector has increased significantly. In 1995, the total area of the sector was only 241 992 ha. However, in 2016, the total area increased to 933 948 ha and the total area percentage also increased from only 9.53% in 1995 to 16.3% in 2016.

On a regional basis, the bulk of the independent smallholders with a total of 166 975 in 2016 were in Peninsular Malaysia

followed by Sarawak (34 980) and Sabah (34 964). In the same year, the total oil palm areas of independent smallholders in Peninsular Malaysia, Sabah and Sarawak were 511 004 ha, 221 678 ha and 201 266 ha, respectively. In Sabah, Kinabatangan owns the highest number of independent smallholders with a total of 7 094 smallholders, followed by Labuk/Sugut (6491), Lahad Datu (3616) and Tawau (3174) (Table 2). In 2016, the oil palm area owned by independent smallholders in Sabah averaged 6.4 ha. The highest number of independent smallholders in Sarawak was in Miri, *i.e.* 11 565 followed by Samarahan (4512), Betong (3672) and Bintulu (3398) (Table 3). In comparison to the estate sector, the independent smallholders sector is frequently associated with issues such as low fresh fruit bunch (FFB) yield, low-quality FFB, poor agricultural practices, *etc* (Azman *et al.*, 2015). The average yield of FFB of the independent smallholder sector is estimated to be less than 18 t ha<sup>-1</sup> year<sup>-1</sup>. Azman *et al.* (2003) found that the average FFB yield of the independent smallholders in Johor in 2000 was only 15.85 t ha<sup>-1</sup> year<sup>-1</sup>. That average yield was lower than the estate sector in Johor which recorded an average FFB

yield of 19.55 t ha<sup>-1</sup> year<sup>-1</sup> in the same year. This shows that there is room for further improvement in the FFB yield of the independent smallholder sector. There are a number of factors that caused the independent smallholders to harvest a smaller yield. Some of them did not implement the recommended plantation management practices, planting poor-quality seeds or seedlings and improper monitoring. Labour shortage problems, especially for harvesting and FFB collection as well as fertiliser application activities, are currently the main factors contributing to the low yield and quality of FFB for the independent smallholder sector. Most of the independent smallholders are too dependent on FFB contractor and dealers who supply workers especially for FFB harvesting and collection, fertiliser application and weeding.

In our country, most of the independent smallholders in the Malaysian palm oil plantation sector are elderly people who need to hire workers, especially for harvesting and FFB collection activities. For the estate sector, these activities are currently mainly undertaken by foreign workers. However, to apply for foreign workers, oil palm area of the independent smallholders should be more than 6.0 ha. On average, Malaysia's independent smallholders have an oil palm area of 3.9 ha. Therefore, it is believed that they have problem in getting workers to harvest and collect FFB and this situation can be considered as a labour shortage.

The labour shortage is a serious issue in plantations because the sector is labour intensive. One of the major problems faced by the oil palm plantations sector (estate and smallholders) is the lack of manpower. Although this sector offers a number of employment opportunities, it is not attractive

**TABLE 1. DISTRIBUTION OF OIL PALM PLANTATION AREAS BY SECTORS, 1995 AND 2016**

Category	1995		2016	
	ha	%	ha	%
Independent Estates	1 255 466	49.4	3 508 554	61.2
Federal Government Schemes:				
FELDA	675 392	26.6	706 588	12.3
FELCRA	132 198	5.2	173 032	3.0
RISDA	41 571	1.7	71 549	1.2
State / Govt. Agencies	193 468	7.6	344 314	6.0
Smallholders	241 992	9.5	933 948	16.3
<b>Total</b>	<b>2 540 087</b>	<b>100.0</b>	<b>5 737 985</b>	<b>100.0</b>

Source: PORLA, 1996 and MPOB, 2017a.

**TABLE 2. NUMBER AND AREA OF INDEPENDENT SMALLHOLDERS IN SABAH ACCORDING TO DISTRICT, 2016**

District	No of Independent Smallholders	Total Area (ha)
Beaufort	1 364	6 381
Keningau	2 708	14 703
Kinabatangan	7 094	42 180
Kota Belud	272	1 283
Kota Kinabalu	16	121
Kota Marudu	549	3 047
Kuala Penyu	145	570
Kudat	1 036	6 025
Kunak	958	8 089
Labuan	1	11
Labuk / Sugut	6 491	37 482
Lahad Datu	3 616	28 151
Papar	90	909
Penampang	9	34
Pensiangan	278	1 387
Pitas	1 574	9 253
Ranau	1 266	7 309
Sandakan	2 244	14 299
Sampoerna	1 372	10 181
Sipitang	117	668
Tambunan	122	684
Tawau	3 174	26 077
Tenom	439	2 634
Tuaran	29	202
<b>Total</b>	<b>34 964</b>	<b>221 678</b>

Source: MPOB, 2017a.

to locals because employment in the industry is perceived as dirty, dangerous, and difficult (3D). The locals shy away from working in the plantation sector resulting in the labour shortages. Subsequently, foreign workers are employed to fill the voids. The presence of foreign workers in the industry leads to both positive and negative impacts. For example, if the number of foreign workers is reduced by 30%, Malaysian export earnings may shrink more than RM 10 billion (Mamat, 2010). The industry can reduce their losses as

bunches and loose fruits can be collected completely by foreign workers (Mahbob, 2010). On the other hand, when these foreigners leave the country after their work permits expire, training has to be given to the new workforce. This will lead to higher cost of production.

The Malaysian oil palm plantation sector is heavily dependent on foreign workers. As at December 2016, a total of 429 351 workers were employed in oil palm estates (MPOB, 2017b). Out of that, 330 185 workers or 77%

were foreign labours. Most of them were hired for FFB harvesting, collecting and general works such as fertiliser application, weeding and pruning. Over dependence on foreign workforce can pose a threat to the security and stability of the industry in particular and the country in general (Ramli *et al.*, 2011). Apart from being over dependent on foreign labour, the oil palm estates also face a labour shortage.

By knowing well all the scenarios in the independent smallholders sector, it is important to study the labour situation in this sector holistically. There is a need to review the policies and strategies of foreign labour in the palm oil industry and manage them in a more integrated manner among the ministries, agencies and industry associations (Mamat, 2010). Furthermore, without a revaluation in labour productivity and acceleration in its yield growth, palm oil's competitive advantage will vanish (Nageeb, 2010). Thus, the study helps to understand the industry's labour needs and assist in the formulation of strategies and policies that attract more locals to work in the industry. For that, it is important to have a study on the current labour requirements for oil palm independent smallholders in order to understand and find the best solution to overcome any labour-related problems. Unlike the estate sector, so far there is no information on labour requirements for the independent smallholders sector, especially in Sabah and Sarawak. This study attempts to estimate the labour requirement in the oil palm independent smallholders sector in Sabah and Sarawak.

## METHODOLOGY

This study used the primary data collected through face-to-face interview assisted by questionnaires

in the form of a survey. To test the effectiveness of questionnaires and the reliability, a pilot test was conducted involving 10 and 5 independent smallholders in Sabah and Sarawak, respectively. Among the information that collected through the questionnaire are the total area, the age of respondents, number of harvesters and FFB collector, and wages paid to the harvesters and FFB collector. For sampling techniques, only independent smallholders in six districts in Sabah and Sarawak were selected to represent all independent smallholders in the states. The list of independent smallholders from the six districts in Sabah and Sarawak was obtained from the MPOB's smallholder database. Based on the formula below used by Krejcie and Morgan (1970), the minimum sample size for both Sabah and Sarawak are 379 respondents. However, for this study, the total respondents who were used as samples in Sabah and Sarawak were 397 and 392, respectively. The breakdown of the respondents' interview in Sabah and Sarawak according to their districts is shown in *Table 4* and *Table 5*.

$$n = \chi^2 NP (1 - P) \div d^2 (N-1) + \chi^2 P (1 - P)$$

Where:

n = required sample size

$\chi^2$  = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (0.05)

**TABLE 3. NUMBER AND AREA OF INDEPENDENT SMALLHOLDERS IN SARAWAK ACCORDING TO DISTRICT, 2016**

District	No of Independent Smallholders	Total Area (ha)
Betong	3 672	15 933
Bintulu	3 398	20 360
Kapit	870	4 591
Kuching	1 482	12 062
Limbang	1 021	4 878
Miri	11 565	71 258
Mukah	1 719	9 692
Samarahan	4 512	27 244
Sarikei	2 087	12 672
Sibu	2 188	11 979
Sri Aman	2 466	10 596
<b>Total</b>	<b>34 980</b>	<b>201 266</b>

Source: MPOB, 2017a.

**TABLE 4. NUMBER OF INDEPENDENT SMALLHOLDERS INTERVIEWED ACCORDING TO DISTRICTS IN SABAH**

Districts	Number of Independent Smallholders	No of Respondents
Keningau	2 443	42
Kinabatangan	7 037	109
Labuk / Sugut	6 324	106
Lahad Datu	3 583	56
Sandakan	2 215	35
Tawau	3 101	49
<b>Total</b>	<b>24 703</b>	<b>397</b>

**TABLE 5. NO OF INDEPENDENT SMALLHOLDERS INTERVIEWED ACCORDING TO DISTRICTS IN SARAWAK**

District	No of Independent Smallholders	No of Respondents
Betong	3 152	45
Bintulu	3 046	46
Miri	10 710	181
Samarahan	3 848	48
Sibu	1 914	32
Sri Aman	2 149	40
<b>Total</b>	<b>24 819</b>	<b>392</b>

RESULTS AND DISCUSSION

Number of Respondents

A total of 397 respondents were interviewed in Sabah. The highest number of respondents in Sabah came from Kinabatangan (109 respondents), while the lowest number of respondents were from Sandakan (35 respondents)

(Figure 1). Of the total, 254 respondents had matured area and 83 respondents had immature area while the rest had both matured and immature areas.

In Sarawak, a total of 392 respondents were interviewed and the highest number of respondents were from Miri (181 respondents) while the lowest number of respondents were from Sibiu (32 respondents)

(Figure 2). In terms of the area, out of the 392 330 respondents had matured area, nine had immature area, and the rest 53 respondents had both immature and matured areas.

In Sabah, the total oil palm area owned by the respondents was 1630.28 ha, in which 1116.75 ha or 68.5% were matured oil palm, while the remaining 513.53 ha or 31.5% were immature oil palm. In Sarawak, the total oil palm area owned by the respondents was 1909.53 ha, in which 1731.03 or 90.7% were matured oil palm, while the remaining 178.50 ha or 9.3% were the immature area (Table 6). On an average, each respondent in Sabah had 4.11 ha of oil palm planting; the minimum and maximum areas owned were 0.40 and 23.07 ha, respectively. In Sarawak, each respondent averagely owned 4.82 ha of oil palm planting; the minimum and maximum areas owned were 0.61 and 31.77 ha, respectively.

Item	Total Area (ha)	
	Sabah	Sarawak
Matured	1 116.75	1 731.03
Immatured	513.53	178.50
<b>Total</b>	<b>1 630.28</b>	<b>1 909.53</b>

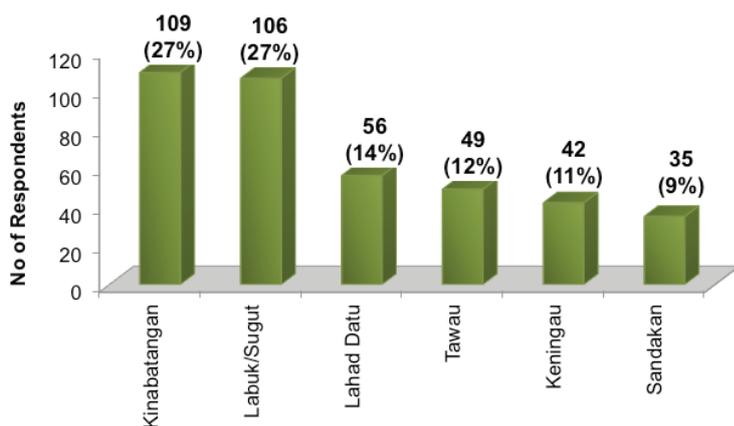


Figure 1. Number of Respondents in Sabah.

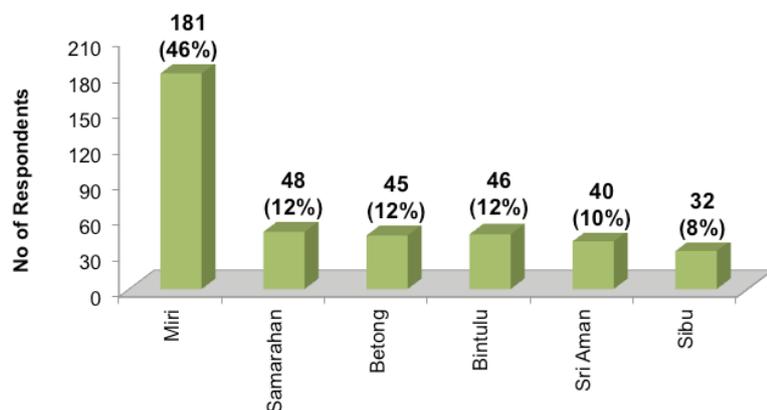


Figure 2. Number of Respondents in Sarawak.

Ethnicity of Respondents

The majority of the respondents in Sabah were Kadazan/Dusun at about 38% (151 respondents), followed by Bajau, 25% (101), Sungai, 11% (42) and the rest are Bugis, Cina, Iban, Idahan, Lundayeh, Suluk, Tidong and Brunei-Melayu which fall under 'others'. (Figure 3).

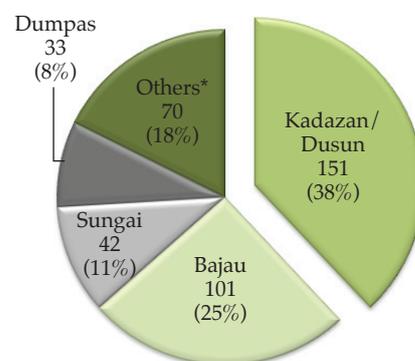


Figure 3. Ethnicity of Respondents in Sabah.

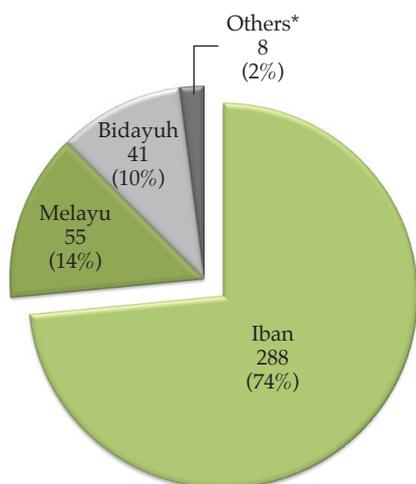


Figure 4. Ethnicity of Respondents in Sarawak.

In Sarawak, the majority of respondents were Iban, accounting for approximately 74% (288 respondents), followed by Melayu, 14% (55), Bidayuh, 10% (41) and others, 2% (8) (Figure 4).

#### Age of respondents

The youngest age among the respondents in Sabah was 19 years old while the oldest was 89 years old (Figure 5). Averagely, the age of the respondents in Sabah was 52 years old. In Sarawak, the youngest was 26 years old while the oldest was 86 years old. On average, the age of the respondents in Sarawak was 54 years old. At this age, both respondents in Sabah and Sarawak can be considered as elderly.

#### Gender of respondent

Table 7 shows the gender of the respondents. In Sabah, out of 397 respondents, 289 or 72.8% were male and the rest were female. While in Sarawak, of the 392 respondents, 278 or 70.9% were male and the rest were female.

#### Education Level

Based on the survey in Sabah, it was noted that the level of education for the majority of the respondents

Gender	Sabah	Sarawak
Male	289	278
Female	108	114
<b>Total</b>	<b>397</b>	<b>392</b>

Education level	Sabah	Sarawak
No education	62	114
Primary school	125	131
Secondary school	182	135
Higher education	28	12
<b>Total</b>	<b>397</b>	<b>392</b>

Item	No of respondents	Percentage (%)
Hire workers	174	55.4
Do not hire workers	53	16.9
Do not hire workers (Assisted by family, other smallholders, etc)	87	27.7
<b>Total</b>	<b>314</b>	<b>100.0</b>

Item	No of respondents	Percentage (%)
Hire workers	161	42.0
Do not hire workers	61	16.0
Do not Hire workers (Assisted by family, other smallholders, etc)	161	42.0
<b>Total</b>	<b>383</b>	<b>100.0</b>

Harvesting cycle	Sabah	Sarawak
Every 15 days	257	220
Every 20 days	19	123
Others	38	40
<b>Total</b>	<b>314</b>	<b>383</b>

(182 or 45.8%) was secondary school, followed by primary school (31.5%) and higher education (7.1%) (Table 8). However, 62 respondents or 15.6% had no formal education. In Sarawak, the

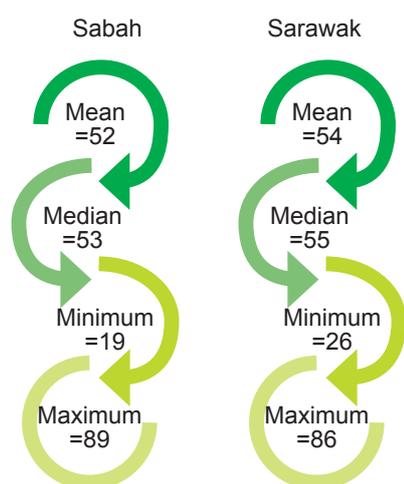


Figure 5. Ages of Respondents in Sabah and Sarawak.

level of education for the majority of the respondents (135 or 34.4%) was secondary school, followed by primary school (33.4%) and higher education (3.1%). The remaining 114 respondents or 29.1% had no formal education.

#### Respondents who Hired Worker for Harvesting and FFB Collection

Workers require more energy for harvesting and FFB collection which is usually carried out by foreign workers less than 50 years old. As the average age of the respondents in Sabah was 52 years old, it is expected that most of the respondents will have to hire workers to carry out this activity. As shown in Table 9, 174 respondents or 55.4% of the total respondents have hired workers for harvesting and FFB collection.

In Sarawak, only 42% of the total respondents hired workers for harvesting and FFB collection (Table 10). Meanwhile, 42% of the respondents did not hire workers. However, they were actually assisted by family or other smallholders.

In terms of harvesting cycle, most of the respondents in Sabah (257 respondents, or 81.8%)

and Sarawak (220 respondents or 57.4%) reported that their harvesting cycle was completed every 15 days. (Table 11). This shows that they have no problem in getting harvesters. On an average, harvesting cycles for most of the respondents in Sabah (87.9%) and Sarawak (89.6%) were every 15 days and 20 days, respectively.

#### Foreign Workers Hired by Respondents

A foreign worker in Malaysia is defined as non-Malaysians who works in Malaysia using the Temporary Employment Visit Pass produced by the Malaysian Immigration Department

(Zulnasri, 2010). In oil palm plantations, foreign workers are mostly working as harvesters and FFB collectors, as well as doing other field works such as applying fertiliser, weeding and pruning. Based on the survey, 150 locals (53%) were hired from a total of 285 workers to harvest and collect FFB in Sabah, while in Sarawak, 177 local workers (53%) out of 337 workers were hired for harvesting and collecting FFB (Table 12). It is surprising that the percentage of foreign workers hired by the respondents in both states is lower than the locals. It shows that the locals are still interested to work in oil palm plantations, especially for independent smallholder sector.

**TABLE 12. PERCENTAGE OF FOREIGN WORKERS HIRED BY RESPONDENTS FOR FFB HARVESTING AND COLLECTION IN SABAH AND SARAWAK**

States	Number of foreign workers	Number of locals	Total	Percentage of foreign workers (%)
Sabah	135	150	285	47.0
Sarawak	160	177	337	47.0

**TABLE 13. ETHNICITY OF LOCAL WORKERS HIRED BY RESPONDENTS FOR FFB HARVESTING AND COLLECTION IN SABAH**

Ethnics	Total workers	Percentage (%)
Kadazan / Dusun	59	39
Bajau	40	27
Others	51	34
<b>Total</b>	<b>150</b>	<b>100</b>

**TABLE 14. ETHNICITY OF LOCAL WORKERS HIRED BY RESPONDENTS FOR FFB HARVESTING AND COLLECTION IN SARAWAK**

Ethnics	Total workers	Percentage (%)
Iban	107	60
Malay	45	25
Bidayuh	17	10
Others	8	5
<b>Total</b>	<b>177</b>	<b>100</b>

**TABLE 15. ESTIMATED TOTAL LABOUR REQUIREMENT IN THE OIL PALM INDEPENDENT SMALLHOLDERS SECTOR IN SABAH AND SARAWAK**

State	Actual matured area (ha)	Hired labour area (ha)	Estimated total labour	Estimated labour shortage
Sabah	213 547	137 545	7837	786
Sarawak	173 371	88 107	4807	398
<b>Sabah &amp; Sarawak</b>	<b>386 918</b>	<b>225 652</b>	<b>12 644</b>	<b>1 184</b>

Note: Sabah: Based on land-labour ratio 1.35:1 and 26 working days a month.

Sarawak: Based on land-labour ratio 1.41:1 and 26 working days a month.

### The ethnicity of Locals Hired by Respondents

For harvesting and FFB collection, the local workers hired by the respondents in Sabah were mostly Kadazan/Dusun with a total of 59 workers or 39% while the remaining were Bajau (40 workers or 27%) and others such as Bugis, Dumpas, Iban, Malay, Suluk and Tidong (*Table 13*).

In Sarawak, the majority of workers in the oil palm independent smallholder sector were Iban (60%) and the rest were Malay (25%), Bidayuh (10%) and others (5%), such as Kedayan and Melanau (*Table 14*).

### Estimated Workforce of Harvesting and FFB Collection if Harvesting Cycle is for Every 15 Days

From the survey, it was found that the land-labour ratios for harvesting and FFB collection in Sabah and Sarawak were 1.35:1 and 1.41:1, respectively. This means that one (1) harvester and FFB collector in Sabah covered 1.35 ha while in Sarawak, one (1) harvester and FFB collector covered 1.41 ha. Based on this ratio, the total labour requirement for harvesting and FFB collection activity can be estimated. By assuming a total of 26 working days a month and a harvesting cycle of every 15 days,

the total labour requirements for harvesting and FFB collection in the oil palm independent smallholder sector (including estimated labour shortage) for Sabah and Sarawak are 7837 and 4807, respectively (*Table 15*). Altogether, the estimated total labour requirement for harvesting and FFB collection in both states is 12 644 workers.

### CONCLUSION

The contribution of the oil palm independent smallholder sector to the growth of the country's economy is increasingly evident. This can be seen from the annual increase in the palm oil sector. In addition, this sector contributes significantly to the socio-economic development of the rural communities. In line with the increase in oil palm planted area, the number of independent smallholders has increased from year to year. However, due to age factor, independent smallholders need to hire workers for harvesting and FFB collection activities as the activities require a lot of energy. The study showed that local workers are still involved. This means that local workers are still interested in participating in the oil palm plantation sector, especially the independent smallholder sector. Efforts should be made to attract more local workers to participate

in this sector. To address the shortage of workers and to ensure the effective plant management and to reduce production cost, it is suggested that independent smallholders develop their farms in groups. Through group farming management, mechanisation can be adopted efficiently. Independent smallholders are also encouraged to join the Sustainable Palm Oil Cooperative (KPSM) established by the MPOB to assist them in the management and marketing of FFB so that they can earn a better income.

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