

# Labour Requirements in the Independent Oil Palm Smallholder Sector in Peninsular Malaysia

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## ABSTRACT

*The Malaysian oil palm industry is labour-intensive, especially in the plantations. Activities such as harvesting and fresh fruit bunch (FFB) collection require more labour than the other activities. Currently, estate owners including independent smallholders report that they are facing labour shortages for those afore mentioned activities in particular. This study aims to estimate the labour requirements and shortage in the independent oil palm smallholder sector in Peninsular Malaysia, and to formulate a solution for reducing the labour shortage problem. For data collection, face-to-face interviews using close-ended questionnaires were employed, involving a total of 385 independent smallholders throughout Peninsular Malaysia who were randomly selected. The study found that, on average, the age of the respondents was 58 years and 92% of the respondents hired workers for harvesting and FFB collection. The majority of the workers (65%) were foreigners, mostly from Indonesia. Total labour and labour shortage for harvesting and FFB collection operations in the independent oil palm smallholders sector in Peninsular Malaysia are estimated at 25 014 and 3715 respectively. In order to reduce the dependency on foreign workers and labour shortage problem, graduates from 'Kursus Operasi Mekanisasi Ladang' organised by MPOB should be encouraged to be contractors, so that they can manage the independent smallholders, especially for harvesting and FFB collection. For that, the government can provide incentives in the form of soft loans or discounts to enable them to purchase harvesting tools and evacuation machines at a lower price.*

**Keywords:** independent smallholders, labour requirement, labour shortage, foreign workers.

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## 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,

coming from many oil palm products, has increased to RM 67.6 billion in 2016 up from only RM 10.97 billion in 1995 (MPOB, 2017a; PORLA, 1996). The increase in export revenue was mostly as a result

of growth in export quantity as well as an increase in the prices of the exported products. This development has not only profited the oil palm planters in the independent sector, government agencies and smallholders, but also the country.

Good demand for palm oil products has encouraged new entrepreneurs to enter this industry. This is evident from the area of oil palm planting which has been continuously increasing year after year. The oil palm area was only 2.5 million ha in 1995 and had jumped to 5.8 million ha in 2017. From this total, 3 543 429 ha or 61.0% were run by the estate sector, 940 326 ha (16.1%) by the federal government schemes, 347 632 ha (6.0%) by the state governments or government agencies, and the remaining 979 758 ha (16.9%) by independent

smallholders (*Table 1*).

In Malaysia, the smallholder sector can be divided into two categories, namely smallholders who are supervised by Felcra, RISDA, Felcra and State Land Schemes, and smallholders who are independent; the latter are thus referred to as independent smallholders. The oil palm planted area for the independent smallholder sector has shown quite a significant increase. In 1995, its total area was only 241 992 ha. However, the area increased to 979 758 ha in 2017, with the overall percentage area having also increased from 10.0% in 1995 to 16.9% in 2017.

A large portion of the independent smallholders were located in Peninsular Malaysia with 175 630 of them having a total planted area of 538 490 ha in 2017 (*Table 2*). Most of them, i.e. 76 463 (30.7% of the total

number in the country) were located in Johor, followed by Perak (17.8%), Sarawak (15.3%), Sabah (14.2%) and Selangor (8.7%), with the remaining states accounting for 13.3%. In terms of planted areas, the independent smallholders in Johor also owned the largest area, i.e. 223 424 ha or 22.8% of the total oil palm area owned by independent smallholders in Malaysia. The second largest area was owned by the smallholders in Sabah, i.e. 221 139 ha (22.6%), followed by those in Sarawak and Perak, with 220 129 and 123 511 ha, respectively. On average, the oil palm area per independent smallholder in Malaysia was 3.93 ha, while on a regional basis, the average area per independent smallholder in Peninsular Malaysia, Sabah and Sarawak was 3.07, 6.26 and 5.78 ha, respectively.

**TABLE 1. DISTRIBUTION OF OIL PALM PLANTED AREAS BY SECTOR IN 1995 AND 2017**

Category	1995		2017	
	Area (ha)	%	Area (ha)	%
Private estates	1 255 466	49.4	3 543 429	61.0
Federal government schemes:				
Felcra	675 392	26.6	704 811	12.1
Felcra	132 198	5.2	169 158	2.9
RISDA	41 571	1.7	66 357	1.1
State / Govt. agencies	193 468	7.6	347 632	6.0
Smallholders	241 992	9.5	979 758	16.9
<b>Total</b>	<b>2 540 087</b>	<b>100.00</b>	<b>5 811 145</b>	<b>100.0</b>

Source: PORLA (1996), MPOB (2017a).

**TABLE 2. NUMBER AND OIL PALM PLANTED AREA OF INDEPENDENT SMALLHOLDERS IN MALAYSIA, 2017**

State	Number	(%)	Area (ha)	(%)
Johor	76 463	30.7	223 424	22.8
Perak	44 214	17.8	123 511	12.6
Selangor	21 719	8.7	46 386	4.7
Pahang	11 966	4.8	51 462	5.3
Kedah	5 832	2.3	26 650	2.7
Negeri Sembilan	5 586	2.2	26 090	2.7
Terengganu	3 327	1.3	12 922	1.3
Melaka	2 918	1.2	12 675	1.3
Pulau Pinang	1 853	0.7	9 303	0.9
Kelantan	1 735	0.7	5 977	0.6
Perlis	17	0.0	90	0.0
<b>Peninsular Malaysia</b>	<b>175 630</b>	<b>70.5</b>	<b>538 490</b>	<b>55.0</b>
Sabah	35 342	14.2	221 139	22.6
Sarawak	38 057	15.3	220 129	22.5
<b>Sabah and Sarawak</b>	<b>73 399</b>	<b>29.5</b>	<b>441 268</b>	<b>45.0</b>
<b>MALAYSIA</b>	<b>249 029</b>	<b>100.0</b>	<b>979 758</b>	<b>100.0</b>

Source: MPOB (2017a).

Compared with the estate sector, the smallholder sector is frequently associated with well-known issues such as low fresh fruit bunch (FFB) yield, low-quality FFB, and lack of good agricultural practices (Azman *et al.*, 2014). The average yield of FFB for the independent smallholder sector was estimated to be less than 18 t ha<sup>-1</sup> yr<sup>-1</sup>. This finding concurs with that from a study by Azman *et al.* (2003) which found that the average FFB yield by smallholders in Johor in the year 2000 was only 15.85 t ha<sup>-1</sup> yr<sup>-1</sup>. That average yield was lower than that of the estate sector in Johor which recorded an average FFB yield of 19.55 t ha<sup>-1</sup> yr<sup>-1</sup> in the same year (MPOB, 2001). This shows that FFB yield

in the smallholder sector has much room for improvement.

There are a number of factors for the low FFB yield obtained by the smallholders. Common ones are that some of these smallholders do not implement the recommended plantation management practices, they use poor quality seed or seedlings, and carry out improper monitoring. However, the most critical one is the labour shortage problem, especially for harvesting and FFB collection and as well as for fertiliser application. Most of the smallholders are also too dependent on contractors and FFB dealers who supply workers, especially for FFB harvesting, collection, fertiliser application and weeding.

Labour shortage is a serious issue in the whole oil palm sector which is in itself a labour-intensive sector. One of the major problems faced by the sector (estates and smallholders) is the lack of manpower resources. Although this sector offers a number of employment opportunities, it is not attractive enough for local workers because the jobs are perceived by them as being dirty, dangerous and difficult. Local workers shy away from hard physical labour, especially encountered in plantations, thus, resulting in a labour shortage situation. Due to this, foreign workers are being employed. The presence of foreign workers in the industry can have both

positive and negative impacts. On the positive side, their presence can reduce the labour shortage problem, and reduces the industry's losses (Mahbob, 2010). On the negative side, when the foreigners leave the country after their work permits expire, they take home their skills as well, which means a new round of training is required for the new intake, leading to a temporary drop in productivity, thus resulting in higher costs.

The Malaysian oil palm plantation sector is heavily dependent on foreign workers. As of December 2016, it was estimated that 429 351 workers were employed in oil palm estates (MPOB, 2017b). Out of these workers, 330 185 or 77% were foreign. This is because estates faced a labour shortage problem and needed to employ foreign workers. As of December 2016, total labour shortage in estates was estimated at 39 274 workers. Most of the labour was hired for FFB harvesting and collection, and for general work such as fertiliser application, weeding and pruning. Over-dependence on a foreign workforce can pose a threat to the security and stability of the industry in particular, and to the country in general (Ramli *et al.*, 2011).

Once the scenario in the independent smallholder sector is fully understood, it is important then to study the labour situation in the sector holistically. There is a need to review the policy and strategy on foreign labour in the palm oil industry and to manage it in a more integrated manner among the ministries, agencies and industry associations (Mamat, 2010). Furthermore, without reevaluating labour productivity and acceleration in oil palm yield growth, palm oil's competitive advantage

over other vegetable oils will vanish (Nageeb, 2010).

Major players in the Malaysian oil palm sector include estates and smallholders. The sector is presently facing a critical problem of labour shortage due to disinterest by locals in carrying out all the field activities of the oil palm industry. The shortage has led the industry to resort to engaging foreign labour. Thus, understanding the labour situation in the oil palm sector is deemed important. For estates (including organised smallholders), the task of monitoring labour is undertaken through the e-labour system developed by MPOB. The system requires the estates and organised smallholders to report monthly their labour situation and any shortage to MPOB. Thus, employment statistics and shortages in the estates and organised smallholders are available. However, there is a lack of information on the labour situation and shortage among independent smallholders in the Malaysian oil palm sector. In Peninsular Malaysia, these smallholders are not eligible to engage foreign workers because they do not meet the requirements for hiring foreign workers as most of them own less than 8 ha of oil palm each (JTK, 2011). It is also a well-known fact that most of the independent smallholders are relatively old and that they need to hire workers especially for harvesting and FFB collection. Hence, they have to resort to hiring illegal foreign workers. Thus, it is important to have a study on the current labour situation facing independent oil palm smallholders in order to fully understand their predicament, and to find the best solution for overcoming problems related to labour.

## METHODOLOGY

This study used primary data which were collected through the random sampling technique using close-ended questionnaires. The study involved independent smallholders selected from all the states (except Perlis) of Peninsular Malaysia, out of those listed in MPOB's smallholder database. A questionnaire was designed and face-to-face interviews were conducted. In order to test the questionnaire and the reliability of the data obtained through the survey, a pilot test was first carried out, involving 20 independent smallholders in Selangor.

Based on the formula below which was used by Krejcie and Morgan (1970), the minimum sample size was 383.

$$n = \frac{\chi^2 * N * P * (1 - P)}{(ME^2 * (N - 1)) + (\chi^2 * P * (1 - P))}$$

where:

- n = sample size
- $\chi^2$  = Chi-square for the specified confidence level at 1 degree of freedom
- N = population size
- P = population proportion (.50)
- ME = desired margin of error (expressed as a proportion)

However, for this study, 385 independent smallholders from all the states (except Perlis) in Peninsular Malaysia were selected at random as samples. The breakdown of the number of respondents according to state is shown in *Table 2*. Information such as total area, age of respondents, education level of respondents, number of harvesters and FFB collectors were gathered through this survey.

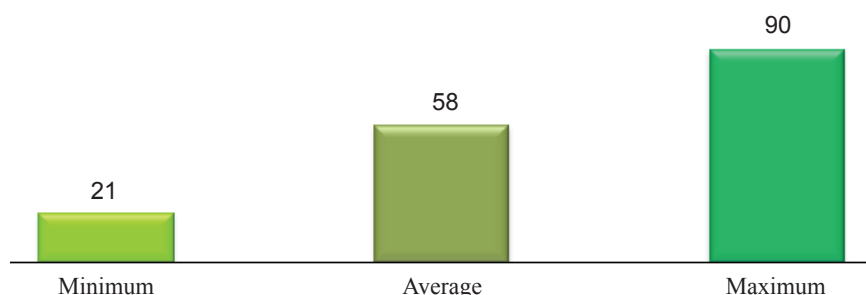


Figure 1. Age of the respondents.

## RESULTS AND DISCUSSION

### Number of Respondents by State and Total Oil Palm Area

A total of 385 respondents were interviewed and they represented all the states (except Perlis) in Peninsular Malaysia. The highest number of respondents were from Johor (175 respondents) while the lowest number were from Kelantan (three respondents). The total oil palm area owned by the respondents was 1374.22 ha, of which 1221.81 ha or 88.9% were mature oil palm while the rest (152.41 ha or 11.1%) were immature oil palm. On average, each respondent had 3.46 ha of oil palm planting; minimum and maximum areas owned were 0.16 and 28.33 ha, respectively.

### Age of Respondents

The youngest age of the respondents was 21 years while the oldest was 90 years (Figure 1). On average, the age of the respondents was 58 years. At this age, they can be considered elderly.

### Education Level

Based on the survey, it was noted that the level of education for the majority of the respondents (193 or 50.1%)

was secondary school, followed by primary school (35.6%) and higher education (8.6%) (Table 4). However, 22 respondents or 5.7% had no formal education.

### Job Status of Respondents

Most of the respondents (300 in number, or 77.9%) were categorised as being engaged full time in managing their palms, while the remaining 85 respondents (or 22.1%) were considered to be part time (Table 5). They were categorised as full time if their income was totally

dependent on their palms, while the opposite is true. For the part time smallholders, the main jobs reported were self-employed, followed by government servant, private sector employee, and others such as a lorry or taxi driver.

### Respondents Who Hired Workers for Harvesting and FFB Collection

A worker requires more energy for harvesting and FFB collection and these activities are usually done by workers who are less than 50 years old. As the average age of the respondents was 58 years old, it is expected that most of the respondents had to hire workers to carry out these activities. As shown in Table 6, 336 respondents or 92% of the total hired workers for harvesting and FFB collection.

### Harvesting Cycle

Most of the respondents (216 respondents, or 58.8%) reported that their harvesting cycle was

TABLE 3. SAMPLE SIZE OF INDEPENDENT SMALLHOLDERS BY STATE

State	No. of independent smallholders	Sample size
Johor	73 154	175
Kedah	5 481	14
Kelantan	1 575	3
Melaka	2 718	6
Negeri Sembilan	5 411	15
Pahang	10 962	26
Perak	41 519	80
Perlis	16	0
Pulau Pinang	1 799	6
Selangor	21 240	53
<b>Total</b>	<b>166 975</b>	<b>385</b>

**TABLE 4. EDUCATION LEVEL**

<b>Education level</b>	<b>Number of respondents</b>
No education	22
Primary school	137
Secondary school	193
Higher education	33
<b>Total</b>	<b>385</b>

**TABLE 5. NUMBER OF RESPONDENTS WHO WERE FULL TIME OR PART TIME SMALLHOLDERS**

<b>Job status</b>	<b>No. of respondents</b>
Part time	85
Full time	300
<b>Total</b>	<b>385</b>

**TABLE 6. PERCENTAGE OF RESPONDENTS WHO HIRED WORKERS FOR HARVESTING AND FFB COLLECTION**

<b>Item</b>	<b>Total</b>	<b>%</b>
Hired workers	336	92
Did not hire workers	31	8
<b>Total</b>	<b>367</b>	<b>100</b>

**TABLE 7. HARVESTING CYCLE REPORTED BY RESPONDENTS**

<b>Frequency of harvest</b>	<b>No. of respondents</b>	<b>%</b>
Every 15 days	216	58.8
Every 20 days	120	32.7
Other	31	8.5
<b>Total</b>	<b>367</b>	<b>100.0</b>

every 15 days (Table 7). This shows that they did not have a problem in getting harvesters. On average, the harvesting cycle for most of the respondents (91.5%) was every 15 or every 20 days.

### Respondents Who Hired Workers for Fertiliser Application

Fertiliser application includes application of any natural or artificial substance for improving the soil of the area planted with oil palm. Unlike harvesting and FFB collection, fertiliser application is normally done once to three times per year by the independent smallholders themselves. The survey found that most of the respondents (230 or 60.7%) also hired workers to do the job (Table 8).

### Foreign Workers Hired by Respondents

A foreign worker in Malaysia is defined as someone who is not a Malaysian, working in Malaysia using a Temporary Employment Visit Pass issued by the Malaysian Immigration Department (Zulnasri, 2010). In oil palm plantations, foreign workers mostly work as harvesters and FFB collectors, as well as doing other field work such as fertiliser application, weeding and pruning. Based on the survey, 495 foreign workers (65%) were hired out of a total of 762 workers for harvesting and collecting FFB (Table 9). Most of these workers were from Indonesia (475 or 96.0%) while the remaining were from Bangladesh. For fertiliser application, the percentage of foreign workers hired by the respondents was also higher than the percentage of locals. Out of 478 hired workers, (290 or 60.7%) were foreigners

with most of them also from Indonesia (276 or 95.2%), while the rest were from Bangladesh.

### Estimated Workforce for Harvesting and FFB Collection When Harvesting Cycle was Every 15 Days

From the survey, it was found that the land-labour ratio for harvesting and FFB collection was 1.5:1. It means that 1 worker covered 1.5 ha. Based on this ratio, the total labour requirement can be estimated. If we assume that total number of working days was 26 days a month, and that the harvesting cycle was every 15 days, total labour requirement for harvesting and FFB collection in the independent oil palm smallholder sector was 25 014 workers (Table 10). Independent

smallholders in Johor with the largest mature oil palm area (212 139 ha) would require the most labour (10 480 workers) compared with the other states.

### CONCLUSION

Other than the estate sector, the independent smallholder sector also plays an important role in the growth of the nation's palm oil industry. The number of and oil palm planted area owned by the independent smallholders are both rising year after year, and the majority of these smallholders work full time on their holdings, with their income totally dependent on the sale of FFB. Due to the age factor, they need to hire workers especially for harvesting and FFB collection. Even though most of the hired workers are

**TABLE 8. PERCENTAGE OF RESPONDENTS USING HIRED WORKERS FOR FERTILISER APPLICATION**

Item	No. of respondents	%
Hired workers	230	60.7
Did not hire workers	149	39.3
<b>Total</b>	<b>379</b>	<b>100.0</b>

**TABLE 9. PERCENTAGE OF FOREIGN WORKERS HIRED BY RESPONDENTS ACCORDING TO JOB ACTIVITIES**

Job activity	No. of foreign workers	No. of locals	Total	Percentage of foreign workers (%)
Harvesting and FFB collection	495	267	762	65.0
Fertiliser application	290	188	478	60.7

**TABLE 10. ESTIMATED TOTAL LABOUR REQUIREMENT IN THE INDEPENDENT OIL PALM SMALLHOLDER SECTOR**

State	Actual mature area (ha)	Area with hired labour (ha)	Estimated total labour	Estimated labour shortage
Johor	212 139	204 353	10 480	1 556
Kedah	25 028	24 109	1 236	184
Kelantan	5 134	4 946	254	38
Melaka	11 799	11 366	583	87
Negeri Sembilan	24 691	23 785	1 220	181
Pahang	47 295	45 559	2 336	347
Perak	114 430	110 230	5 653	839
Perlis	73	70	4	1
Pulau Pinang	9 049	8 717	447	66
Selangor	44 894	43 246	2 218	329
Terengganu	11 799	11 366	583	87
<b>Peninsular Malaysia</b>	<b>506 331</b>	<b>487 747</b>	<b>25 014</b>	<b>3 715</b>

Note: Based on land-labour ratio of 1.5:1 and 26 working days a month.

foreigners, there are still some locals who are willing to work in the sector. Efforts to attract more locals to work in the sector should be made so that the dependency on foreign workers can be reduced.

#### RECOMMENDATION

In order to reduce the dependency on foreign workers, especially for harvesting and FFB collection

as well as fertiliser application, graduates from '*Kursus Operasi Mekanisasi Ladang*' organised by MPOB should be encouraged to be contractors, so that they can manage the independent smallholders' palms, especially for harvesting and FFB collection. For that, the government can provide incentives in the form of soft loans or discounts to enable them to purchase harvesting tools and evacuation machines at a lower price.

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