As a result, based on the objectives, there are two mechanisms for assessing the social life cycle impact assessment (S-LCIA).

2.3.1 Characterization

The S-LCIA approach used in this study is the performance reference points approach. All social subcategories are selected from UNEP 2009 guidelines, and the social indicator is presented in percentages.

2.3.2 Weighting

The normalized indicator result should be weighted for each social indicator. The weighting factor was calculated by sending back the questionnaires to experts to weigh each item. The following step was conducted to obtain the weighting factor (Prasara-A and Gheewala, 2019):

1. The exporter was asked to rate 1 for the least important item and scale the number 10 for the most important item.
2. The average of different items was used to assess the weighting factor for each social indicator.
3. After obtaining the weighting factor, the social indicator results multiply by the weighting factor to reach the social indicator.

2.3.3 Interpretation of the result

The Sawaengsak et al. (2019) classification approach was used to evaluate the social performance of paddy rice production. Sawaengsak et al. (2019) used five classes in their approach as shown in Table 1. The weighted performance index between 0-20 shows poor performance, and the score between 80 to 100 shows outstanding performance.

Table 1: The classification of performance based on Sawaengsak et al. (2019)

Score	Classification of performance
0 - 20	Poor
20 - 40	Fair
40 - 60	Medium
60 - 80	Good
80 - 100	Very good

2.3.4 Data collection

The quantitative method was used to collect specific data about the social issues among the stakeholders involved in rice production. The information about the applicable variable was collected during the Life Cycle Inventory. For this study, primary data was used to support the research, and a survey questionnaire was used, both face-to-face and online survey. A questionnaire is the most convenient method to collect data from all the stakeholders. Meanwhile, the on-call interview has been done with the local authority such as Integrated Agricultural Development Area (IADA) and the rice entrepreneurs to gain information about the population, the number of farmers in the paddy plantation and the number of workers at the mills. Also, a physical survey was conducted, which personally engaged the stakeholders to ask related questions regarding the research. By conducting survey research, multiple survey questions were asked and analysed. The number of respondents for the worker and local community are shown in Table 2.

Table 2: The number of respondents from the stakeholder involved in the study

Stakeholder	Number of respondents
Worker	72
Local community	152
Farmers	152

2.3.5 Questionnaire development

The questionnaire serves as the main instrument to collect the data for this research. Basically, a questionnaire is a data collection tool in which a respondent answers a series of questions. There are a few steps in developing a questionnaire: gathering the background information, validity, and reliability. In this study the questionnaire from our previous study by Kalvani et al. (2022) was used.

2.3.6 Gathering background information

First of all, the questionnaire's goal and objectives were identified before gathering the information for the questionnaire. The research objectives and research questions determined the type of information collected. After the objectives have been determined, the following process is to gather the related information regarding

the topic; thus, a literature review is needed. All the information regarding the stakeholders and the social issues has been precisely collected using a systematic literature review. The types of questions depend on the information that has been gathered. Likert Scale and open-ended questions were used for the questionnaire.

2.3.7 Validity and reliability test

A questionnaire that has been drafted should be ready for a validity test. The level of systematic or built-in mistakes in a questionnaire is known as validity. The validity of a questionnaire can be determined by utilizing expert panels that investigate theoretical constructs. This type of validity will look at how well a theoretical construct's notion is represented in a practical measure like a questionnaire. It is called translational or representational validity. It is vital to highlight that determining the content validity of a research instrument such as a questionnaire, particularly for research purposes, is critical (Bolarinwa, 2016). In this research, the validity of all items used in the questionnaire (content validity) was conducted to test whether the number of each item was sufficient or other items had to be added. In addition, consultation with the experts for improving the questionnaire was done. The experts evaluated the suitability and efficiency of the questionnaires. Eight validators in were professors from Universiti Putra Malaysia (UPM). Then, the content validity index of items (I-CVI) was conducted for each item to evaluate the validity of questionnaires by experts. The questionnaires were developed by inserting a validation box beside each item in questionnaires; then, the validators were asked to tick the 4-point Likert scale. The values recorded were as follows: score 1 = not relevant, score 2 = somewhat relevant, score 3 = relevant, score 4 = very relevant. I-CVI is evaluated as the number of panelists giving a scoring of 3 or 4, divided by the number of panelists. I-CVI is the proportion of agreement about relevant of each item. The I-CVI = 1 means that all panelists agree with the item. The I-CVI should not be lower than 0.78 for doing pilot test.The reliability of the questionnaire has been carried out using a pilot study test. A pilot study was conducted using the prepared questionnaire on appropriate respondents to determine the reliability and results of each question contained in the questionnaire form. Overall, 35 respondents (15 rice farmers, 10 mill workers, 10 local communities) participated in the pilot test that were not included in the actual sample. Cronbach's Alpha test was used to determine the reliability of the questions as they were collected. It is essential to conduct Cronbach's Alpha test to determine the suitability of the questions in the questionnaire and whether they can be used or not. The results of validity and reliability tests are shown in Table 3.

Table 3: The result of validity and reliability test

Stakeholder	Items	Content validity index	Cronbach's alpha
Worker	Discrimination	0.9	0.88
	Child labour	1	0.78
	Working hours	1	0.90
	Fair salary	0.8	0.78
	Employee benefits	0.8	0.87
Local community	Job opportunity	0.8	0.90
	Health and safety	0.8	0.96
Farmers	Income	1	0.90
	Health and safety	0.8	0.76
	Assistant with technology	0.8	0.89
	Living standard	0.9	0.83

3. Result and discussion

3.1 Social performance of paddy rice production

Table 4 shows the characterized social performance of paddy rice production in Malaysia. The rice production shows good performance for workers, and 87 % of workers are satisfied with health and safety equipment. Only 34 % of workers are satisfied with their wages. The paddy rice production shows slightly good performance for community engagement and job opportunities. The result shows that 65 % of the local community agree that paddy rice farms provide job opportunities for local people. 55 % of the local community do not face any health and safety problems related to paddy rice. Around 45 % of locals reported air pollution from residue burning. The farmers do not show good performance for paddy rice production. Only 36 % of farmers are satisfied with their income since there is no stable market for paddy rice in Malaysia.

Table 4: The result of characterized social performances of paddy rice production

Stakeholder	Items	Indicator	Result (%)
Worker	Discrimination	Workers who are not experienced discrimination	69
	Child labour	Workers who are not experienced child labor	87
	Working hours	Workers who are satisfied with their working hour	58
	Fair salary	Workers who are satisfied with their wage	34
	Employee benefits	Workers who satisfy from employee benefit	54
Local community	Job opportunity	Workers who are local community	65
	Health and safety	Local communities with no health and safety issue	72
Farmers	Income	Farmers who satisfy from their income	36
	Health & safety	Farmers who have not experienced health and safety issue	38
	Assistant with technology	Farmers who have access to the technology	63
	Living standard	Farmers who satisfy with their living standard	61

Figure 3 shows the overall social performance of paddy rice production for workers, local community, and farmers. The result indicated that the social performance of local community had better performance than worker, and farmer. Based classification by Sawaengsak (2019) social performances of workers and farmers shows the moderate performance.

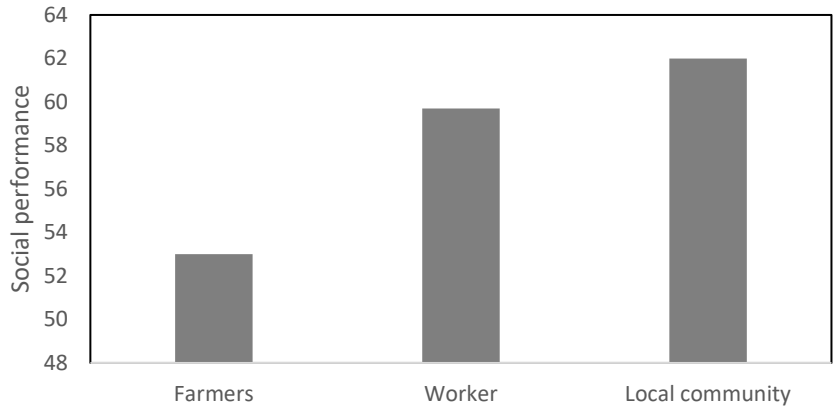

Figure 3: The overall weighted social performance for worker, local community, and farmer

The total social performance of paddy rice production in Selangor in a previous study and this study was compared in Table 5. As it can be seen that the result of this study is slightly similar to the previous study by (Kalvani *et al.*, 2022). The total social performance of farmer stakeholders is based on classification (Sawaengsak *et al.*, 2019). The total performance of the local community in both shows good performance. The social performance of farmers and workers in this study was moderate. However, it shows good performance in this study because it only focused on three divisions of Selangor. However, a previous study concentrated on whole paddy rice in Selangor.

Table 5: Total social performance of paddy rice production in Malaysia in this study and previous study

Stakeholders	Total social performance (This study)	Total social performance (Kalvani et al., 2022)
Farmers	53 (Moderate performance)	66 (good performance)
Worker	59.7 (Moderate performance)	62 (good performance)
Local community	62 (good performance)	64 (good performance)

4. Conclusion

In conclusion, this study has managed to analyze the social issues of the stakeholders involved in rice production in Panchang Bedena, Bagan Terap and Sungai Panjang, Selangor. Based on the results discussed, among the three stakeholders, the rice farmers seem to have the lowest social level for all divisions. Therefore, the critical social issues that rice farmers need to consider are health, safety, and income. Of all the social issues, the health and safety issue has the most items that recorded a poor social level among the rice farmers. One of the reasons for this poor social level is due to excessive usage of pesticides that can harm the farmers' health. In Malaysia, the usage of pesticides is still the first choice for farmers to control pest attacks conventionally. The limitation of this research was data collection since this study was conducted during the COVID-19, and there was movement control by the government. It is suggested to evaluate the environmental impact of paddy rice production by combining it with S-LCA in future research.

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