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Profiling the Suitability of Sustainability and Highest Best Use Approach for FELDA Land Development

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Abstract

Previous scholars posited Sustainability and Highest Best Use Approach (SHBU) having the ability to assist Federal Land Development Authority (FELDA) land development towards improving settlers' livelihood. However, there has been no empirical research done to demonstrate the suitability of the SHBU for optimizing the FELDA land development. This research aims to investigate the suitability of adopting the FELDA land development based on SHBU approach. This research utilised qualitative approach to obtain the feedback from the respondents at the study area which is FELDA Gunung Besout 03. Thus, the Focus Group Discussion has been conducted with the key informants. The findings show that generally, the SHBU approach is suitable for FELDA land development, particularly in Gunung Besout 03. Subsequently, it has the capability in identifying the shortfalls in the current land use activities as well as socio-economic constraints. Furthermore, the potential for using the SHBU approach was profiled and incorporated with some recommendations to ensure the best application. The paper provides good input to relevant parties to assist, particularly in the study area, in adopting the SHBU approach with some modifications in the future.

Keywords: Sustainability, Highest Best Use, Rural, FELDA, Land Development

Introduction

Initially, rural development in Malaysia has been focused on the government policies / initiatives to stimulate the economic activities. It is based on land development and natural resources in increasing the quality of life as well as minimising the socioeconomic gap between urban and rural people. Thus, various initiatives have been done to increase both the economic and social status of rural people. It covers the forming of Rural Development Master Plan and Rural Economic New Model in 2010, Rural Transformation Programme in 2012, National Rural Physical Planning Policy 2030 in 2017 as well as Rural Development Policy in 2018.

There are several organizations that are responsible in developing rural land in Malaysia such as Federal Land Development Authority (FELDA), Federal Land Consolidation and Rehabilitation Authority (FELCRA) and Rubber Industry Smallholders Development Authority (RISDA). However, this article discusses land development in the context of FELDA because it has a huge land area nationwide. It covers about 870,000 hectares that are resided by 112,635 settlers at 317 settlements (Government of Malaysia, 2019).

Generally, FELDA has successfully increased the socio-economic status of targeted group through development of settlement area. For the purpose of sustainability, FELDA has continuously strengthened the development program through various economic activities such as commercial farm management, real estate investment and downstream activities. After 50 years of operations, the agency has transformed itself from being an agricultural leader to a global corporate player (Mohamad et al., 2014). Financial performance of FELDA Group is firm with an income average of RM3.1 billion per year from 2007 until 2011 and rocketed to RM5.9 billion in 2012 (Government of Malaysia, 2019). This achievement gave positive impacts to FELDA settlers such as stable income and life prosperity.

However, as mentioned in a report entitled *Kertas Putih ke Arah Kelestarian FELDA*, there is a substantial number of FELDA households with a lower standard of living (Government of Malaysia, 2019). It is due to various factors such as unproductive crop activities, commodity market volatility, a lack of reform strategies, high debt, and many other related issues, as outlined in the speech by Minister in the Prime Minister's Department (Economy), Datuk Seri Mustapa Mohamed on the FELDA recovery plan (Bernama, 2021). Many FELDA lands have not yet achieved their highest best use due to a variety of factors. Hence, the FELDA transformation agenda, particularly in land development, is critical because the government wishes to improve the socioeconomic status of FELDA settlers to ensure their prosperity and secure the nation's agriculture sector.

Innovative efforts should be proposed to optimise the FELDA land uses in the future. Rashid et al (2022) introduced the Sustainability and Highest Best Use (SHBU) framework for FELDA lands development - a missing link approach to the existing FELDA blueprint (*Kertas Putih ke Arah Kelestarian FELDA*) - particularly the Settlers Development Programme (SDP) or *Program Pembangunan Perneroka* and Smart Plantation Management System (SPMS). SHBU is important and it is believed that it can assist FELDA in terms of land development.

However, the SHBU framework has not yet been applied at any FELDA land development. Hence, the aim of this paper is to investigate the suitability of adopting the FELDA land development based on SHBU approach. Two objectives in this research are as follows:

- i. to identify the suitability of adopting FELDA land development based on SHBU approach.
- ii. to profile the potentials of the SHBU incorporating with some recommendations to optimise its application.

Literature Review

Sustainability and Highest best use

The term sustainable development is the idea that human societies must live and meet their needs without compromising the ability of future generations to meet their own needs. The definition of sustainable development was introduced in the Brundtland Report in 1987. The purpose of sustainable development is to seek the balance among three main components which are economic, social and environment. According to Walacik et al (2020), the concept

of sustainable development involves much more than the 'green' issue, thus can create an added value for real estate analysis (especially based on 'highest and best use' assumptions).

Previous scholars offered many definitions regarding the term of 'Highest Best Use' (HBU). For instance, Akmaludin and Utomo (2013) said HBU is the most possible and permitted use of a land or land that has been built, which is physically possible, supported or justified by regulations, is financially feasible and produces the highest value. HBU is the use of the most possible and optimal of an asset, which is physically possible, has been adequately considered, legally permitted, legally financially viable, and generates the highest value from the asset (Pratama, 2019). Besides, Walacik et al (2020) claimed that highest value is a condition that requires considering all circumstances (physical, legal, financial and productivity) with maximum return rate / developed area / increase of build-up area. Maximal productivity in HBU context means directly not giving any decreases in sustainable value or / and give possibility to increase the sustainable value in the future (Walacik et al., 2020).

From the above definitions, sustainable development and highest best use promote the best effort in land development. Both concepts considered many aspects such as economic, social, environment and legal. Furthermore, Rashid et al (2022) had integrated sustainability and highest-best use into a new development theme, the so-called Sustainability and Highest Best Use (SHBU) to synergise FELDA for a change. Specifically, SHBU is aimed at synergising FELDA transformation towards improving settlers' livelihoods by fully utilising FELDA lands and human resources for optimising profits at its best (Rashid et al., 2022).

Dimensions of Sustainability and Highest Best use Approach

The SHBU concept is not new, but Rashid et al (2022) integrated them into five dimension-objectives measure which is tailor-made to the prospects and fundamental issues of the FELDA development. This is done to diversify the economic catalysts in the settlement schemes by crops-based industries and agropreneurs as the economic themes, together with physical-infrastructure-services elements (e. g. a business centre and residential compound as support systems), and strategic governance unit to monitor at the execution and management level. By doing so, it is hoped that SHBU is able to rejuvenate and synergise FELDA for a change in reflecting the prospects and fundamental issues in the settlements (Rashid et al., 2022).

Table 1 demonstrates the domains, dimensions, and main intentions of SHBU approach. It contains two domains which are sustainability and highest best use. Sustainability domain has three dimensions, namely, FELDA Business Centre (FBC), FELDA Residential Compound (FRC) and FELDA Agropreneur (FAGp). While highest best use domain focuses on two dimensions - FELDA Industry-based Crops (FIBC) and SHBU Plan Management (SPM).

Rashid et al (2022) believed the framework with a symbiosis of five dimension-objectives measure is a strategic and comprehensive approach in realising the SHBU of FELDA lands development in the future. The first three dimensions of sustainability are crucial in making FELDA sustainable for future continuity and in playing a role in the prosperity of rural areas. As the purpose of FBC is to create a vibrant business centre, FRC will provide a proper housing area for second generation of FELDA while FAGp will unfold entrepreneurship opportunities. Besides, FIBC shall diversify the crops at FELDA plantation area.

To put it up front with the current demand, the Unmanned Aerial Vehicle (UAV) and Geographic Information System (GIS)-based Multi-Criteria Decision Analysis (MCDA) approach are linked to the SHBU framework. Its purpose is to conduct geospatial analyses for classifying lands potential levels and estimating HBU returns based on what-if scenarios

(Rashid et al., 2022). In short, UAV and GIS allow for the assessment of the effectiveness of land suitability for the development of decision-making, for instance in agriculture sector (Norasma et al., 2019).

Table 1

Domains and dimensions of sustainability and highest best use approach

Domains	Dimensions	Main Intentions
Sustainability	1. FELDA Business Centre (FBC)	To strengthen FBC as a catalyst development of FELDA settlements that is linked to industrial-based crops and community needs. This also involves geospatial analysis for identifying a new FBC based on the UAV and GIS-based MCDA approach and land suitability criteria.
	2. FELDA Residential Compound (FRC)	To promote sustainable residential and resilient-liveable community for FELDA second and the next generation. It also involves geospatial analysis based on UAV and GIS-based MCDA approach and land suitability criteria.
	3. FELDA Agropreneur (FAgp)	To equip FELDA settlements and younger generation with agropreneur facilities and support system towards multi-sources of income - linked to the main crops (upstream activities). It also involves geospatial analysis based on UAV and GIS-based MCDA approach and land suitability criteria.
Highest Best Use	4. FELDA Industry-based Crops (FibC)	To propose future potential crops (also integrated agricultural development) securing a medium and long term higher-best profit with an income-based and measurable based on UAV and GIS-based MCDA approach and HBU elements such as product quality and productivity, innovations and technology practices.
	5. SHBU Plan Management (SPM)	To set up a task force unit representative from FELDA officers and other FELDA actors to make SHBU plans implementable or executable to deliver good results / profits.

Source: Rashid et al (2022)

Besides, SHBU approach utilises the SHBU Plan Management (SPM) dimension in assigning main actors (as a task force) for making plans implementable and to monitor the delivery of good results and profits. This is important as good governance plays a key role in bringing about or inhibiting change and transformation in the rural development ecosystem (PLANMalaysia, 2017).

Methodology

Research Approach

This research utilised qualitative approach to obtain the feedback from the respondents at the study area which is FELDA Gunung Besout 03. Qualitative approach is selected because this research aims to get an in-depth understanding about the suitability of adopting the FELDA land development based on SHBU approach. Hence, the Focus Group Discussion (FGD) has been conducted with the key informants which are two FELDA representatives at the

study area. Focus group represents a way to collect the data from a group of people who are brought together to discuss a specific topic under the direction or guidance of a moderator and the resulting conversation is recorded and / or observed (McQueen & Knussen, 2002). The strength of FGD is that it enables rich descriptive data that may be inaccessible through quantitative approaches (Kamaruddin et al., 2021).

The first informant is the Manager of FELDA at Gunung Besout 03, while the second informant is the Head of Settlers cum the first generation of FELDA Gunung Besout 03. It is strongly believed that two experienced respondents with FELDA organization at the study area are sufficiently credible to give relevant information for this research. Smaller group was more manageable, and that group made up of strangers required more moderator intervention (McLafferty, 2004).

The FGD has been conducted face-to-face at the study area on 10th November 2021. During that time, there was no more Movement Control Order nationwide. Hence, the researchers could go to the study area and conducted the face-to-face FGD with the respondents. Prior to FGD session, the moderator introduced the researchers to the respondents. Then, she informed the respondents about the purpose of FGD and obtained permission from them to record the session.

During the FGD, the moderator asked some semi-structured questions to the respondents, while other researchers took the notes. The FGD took about two hours. Then, she closed the session and thanked the respondents for their invaluable time and effort. The audio recorded was later transcribed by the research assistant and the notes taken by the researchers were then combined together in order to obtain rich information from the FGD. Once the focus group discussion has been transcribed, the researchers can start extracting the required information (Panke, 2018).

Introduction to the Study Area

Briefly, FELDA Gunung Besout 03 is located in Trolak region, Mukim of Sungkai, District of Batang Padang, Perak, Malaysia (Figure 1). It has been selected because Trolak is among 11 regions of FELDA that has recorded low mean of settler monthly income in oil palm plantation (RM3220.15) during the first half of year 2021 (Jabatan Perladangan FELDA, 2021). There are 21 settlement areas within Trolak region itself. However, this research merely focused on FELDA Gunung Besout 03 due to researchers' capacity and certain limitations.

Its location is approximately 117 kilometres to the south of Ipoh, a capital city of Perak state. The adjacent small towns to this FELDA settlement are Sungkai which is 35 kilometres away in the north and Slim River in the south (20 kilometres). This FELDA scheme can be accessible through Federal Road 1 (Ipoh - Tanjong Malim) and Federal Road 1154 (Trolak - FELDA Gunung Besout) that are aligned at the eastern side of the study area.

The overall acreage of FELDA Gunung Besout 03 is about 1118.60 hectares. Basically, this acreage is divided into two main land uses which are village and oil palm plantation areas. The acreage of village area is approximately 54.04 hectares; while the plantation area makes up about 1064.56 hectares. The main crop for plantation area is oil palm.

There are four types of topography which are peat swamp, flat and undulating, hilly as well as high hilly area. The highest point is about 100 meters from the sea level that is located at the western part of Stage 003 plantation area. While the lowest point is approximately 20 meters which is located at the southern part of Stage 001 plantation area. Most of the topography is considered as flat and undulating (covering about 43 percent of study area acreage). It is followed by high hilly area (27%), hilly (20%) and peat swamp (10%). There is a

small stream running through the southern part of the site, specifically at Stage 001 plantation area. Furthermore, the main surrounding land uses of the study area consist of other FELDA schemes such as Gunung Besout 01 and Gunung Besout 02 in the north.



Figure 1: Location of the study area (source: Wikipedia, n.d.)

The study area has been established since November 1982. Its first generation consists of 271 settlers (Said, 2021). All of them are Malay ethnic group. Most of them (97.05%) are from Perak, while the rest came from three other states - Selangor (1.85%), Kedah (0.74%) and Malacca (0.36%). However, 83 settlers have passed away. Thus, the number of the remaining pioneer settlers is merely 188.

Nowadays, the population of the study area is about 1500 people comprising three generations of family. The age of the study area is about 40 years. Besides, the pioneer settlers are elderly now. Most of them cannot operate the oil palm crop as effective as their younger days. This could be one of the factors that contribute to unproductive crop areas, subsequently returning a lower income. Hence, there is a need to instil some input towards sustainability and highest best use indicating the study area as appropriate for the SHBU application.

Results and Discussions

The results of the analysis are divided into two main parts. The first part clarifies the suitability of adopting FELDA land development based on SHBU approach. The second part discloses the potentials and other requirements of the SHBU approach in a way to strengthen its capabilities for optimising FELDA lands development.

Suitability of Adopting FELDA Land Development based on SHBU Approach

The finding shows that, generally, the SHBU approach is suitable for FELDA land development, particularly in Gunung Besout 03. It is because the respondents were in agreement with that approach because it can benefit the settlers especially the young generation in the future.

Furthermore, the current digital era needs certain appropriate input to improve the socioeconomic status of settlers at the study area.

Potentials and other Requirements for Adopting FELDA land Development based on SHBU Approach

Generally, it was found that there are potentials of adopting FELDA land development based on SHBU dimensions at the study area. However, some requirements need to be considered carefully before adopting that approach.

FELDA Industry-based Crops

The respondents highlighted four requirements that need to be considered before implementing the proposal of FIBC. First, they said only oil palm plantation is allowed at the study area. Other crops are prohibited by FELDA management. Second, illegal oil palm plantation on FELDA reserve land occurs at the study area. Third, drainage system is in poor condition that leads to flood at the farm, especially at Stage 003 of plantation area. Thus, it spoils the farm operation because some oil palm fruit cannot be collected due to flood. Fourth, soil erosion also occurs at Stage 003 of plantation area.

The finding reveals that it is vital to maintain the oil palm plantation as a main crop at the study area. Hence, the idea to vary the industry-based crops such as kenaf, guarana and vanilla at the study area cannot be done until the permission is obtained from FELDA management. However, the up-stream and down-stream activities are highly encouraged to maximise the profit of palm oil industry. In down-stream activity, for instance, Aziz et al (2020) recommended recently manufactured high-rate anaerobic reactors as the most suitable and efficient pre-treatment technique for maximising the extraction of biogas from palm oil mill effluent.

Besides, the illegal oil palm plantation on FELDA reserve land should be prohibited. This is important to give the right to the FELDA management to develop its reserve land with appropriate land use. Furthermore, drainage system and soil erosion should be improved at Stage 003 of plantation area. Good drainage system is essential to avoid clogged drain and flood. While soil erosion should be mitigated to maintain the existing topography. Excerpts from the FGD are listed as follow:

- a. Only oil palm plantation is allowed at the study area. Other crops are prohibited.
- b. Illegal oil palm plantation is found on FELDA reserve land.
- c. Poor drainage system leads to flood at the farm, especially at Stage 003 of plantation area.
- d. Soil erosion occurs at the farm, especially at Stage 003 of plantation area.

FELDA Business Centre

Basically, the respondents agreed with the idea of proposing FBC. However, they asserted the challenge of not having vacant land to create FBC at the study area. Besides, location of the study area is unsuitable to propose FBC as even the night market that had been in operation previously was also not successful. Furthermore, they stated that the location of FBC should be within the larger context which is at Trolak region or at cluster level (combination of three FELDA settlement schemes), not at the study area itself.

From the above finding, it is strongly believed that the success of FBC depends on the size of the area and its population to support its viability. Therefore, the potential location of

FBC should be at the centre of Trolak region (or centre of certain cluster) to give equal distance from various surrounding areas. Excerpts from the FGD are listed as follow:

- a. No vacant land to create FBC at the study area.
- b. Location of the study area is unsuitable for FBC, where even previous night market was not successful.
- c. Location of FBC should be within the larger context which is at Trolak regional level or at cluster level (combination of three FELDA settlement schemes), not at the study area itself.

FELDA Residential Compound

Generally, the respondents agreed with the idea of proposing FRC. Nonetheless, they stated that there is no vacant land at the study area for the proposal of FRC. They also said that the proposed about 100 unit of houses at FELDA Gunung Besout 02 for second generation are not enough. Other challenges which were highlighted by the respondents are poor drainage system and soil erosion at some parts of the settlement area in FELDA Gunung Besout 03.

The finding shows that the proposal of FRC needs a vacant and large area to provide more residential units for the second generation of FELDA at the study area. It is because the demand for housing units is very high among the younger generation. Hence, an appropriate number of housing units should be provided. This is to address the issue of insufficient housing supply in FELDA scheme (Government of Malaysia, 2019). Housing is very important to encourage the younger generation to stay at the study area or adjacent location. With this initiative, it is believed that the study area would be able to maintain its workforce because the younger generation do not migrate to other places to find suitable jobs and proper dwelling.

A good location of FRC should be adjacent to FBC to support its viability. Besides, the walking distance concept of development can be implemented when both residential and commercial areas are located close together or within walking distance. This is in line with many concepts of development such as neighbourhood concept (PLANMalaysia, 2016). Furthermore, other challenges such as poor drainage system and soil erosion at existing settlement area should be improved to create a good housing. Excerpts from the FGD are listed as follow

- a. No vacant land to create FRC at the study area.
- b. The proposed about 100 unit of houses at FELDA Gunung Besout 02 for second generation are insufficient.
- c. Poor drainage system at some parts of settlement area.
- d. Soil erosion at some parts of settlement area.

FELDA Agropreneur

The respondents highlighted potential and certain requirements that need to be considered before implementing the proposal of FAgp dimension. There are three potentials regarding the proposal of FAgp. Initially, they mentioned the study area has many tourism products such as beautiful open view at Bukit Selfie, oil palm farm tour and serene FELDA village environment that can be marketed to tourists. Second, to overcome the shortage of labour at the farm, the respondents said the young generation of FELDA should be attracted and exposed to oil palm industry. For instance, students at the school should be exposed to oil

palm trees. FELDA and the government should instil the knowledge as well as skill of oil palm plantation operation and management at suitable education institutions. Third, the respondents stated that the study area has operated the cooperative shop recently. Hence, they agreed to strengthen the existing cooperative business, specifically in the scope of farm operation.

The finding discloses that there is a need to train the settlers especially the young generation to become successful agropreneurs. This intention can be done by developing, enhancing, and marketing tourism products at the study area. It is because the study area has many potential tourism products such as Bukit Selfie. So, they can become agrotourism operators in the future.

Young generation of FELDA should be attracted and exposed to oil palm industry. For instance, students at the school should be exposed to oil palm trees. FELDA and the government should instil the knowledge as well as the skills of oil palm plantation operation and management at other suitable education institutions. This intention has the potential to overcome or minimise the shortage of labour at the farm. It is vital because oil palm is a commodity plantation of Malaysia. The nation really needs the young local generation (not the foreign workers) to take over the farm operation and management from the elderly. Young generation also can be trained to be an agropreneurs who can operate and manage the farm effectively. Furthermore, Johari et al (2020) found that a majority of young agropreneurs have succeeded in their agricultural production activities such as crops, livestock and fisheries.

Moreover, the existing cooperative business, especially in farm operation, should be strengthened to create a successful cooperative of FELDA Gunung Besout 03. Excerpts from the FGD about the potentials of FAgp are listed as follow:

- a. The study area has many potential tourism products such as beautiful open view at Bukit Selfie, oil palm farm tour and serene FELDA village environment that can be marketed to tourists.
- b. To overcome the shortage of labour at the farm, the young generation of FELDA should be attracted and exposed to oil palm industry. For instance, students at the school should be exposed to oil palm trees. FELDA and the government should instil the knowledge as well as the skills of oil palm plantation operation and management at other suitable education institutions.
- c. There is an agreement to strengthen the existing cooperation business at the study area especially in farm operation.

Besides, the respondents highlighted certain requirements that need to be considered before implementing the proposal of FAgp. It is based on their experience with several previous SDP projects that have been done. They said that usually the SDP projects conducted by individuals did not have a continuation as nobody would take over the projects and run them as usual when the participants died.

This finding discloses the challenge regarding the proposal of FAgp based on several previous SDP projects that have been done. It is because many SDP projects are not continuous when the participants died. Hence, the proposed FAgp project that is run by the individual should have a protégé to continue the business in case of death of the participant. It is important to safeguard the continuity of that project especially when it has already prospered and succeeded. Furthermore, FAgp in various projects should be encouraged

among the settlers especially the young generation. Therefore, it is important to vary the job opportunities at the FELDA scheme to avoid the young generation from migrating to urban area (Ali et al., 2010). An excerpt from the FGD about that requirement is as follows:

- a. Previous SDP projects conducted by individuals are not continuous. Nobody took over the projects to run them as usual when the participants died.

SHBU Plan Management

The respondents highlighted three requirements that need to be considered before implementing the proposal of SPM. First, they said only 117 settlers (43.2%) surrendered their farm to FELDA management; while the other 154 settlers (56.8%) managed the farm by themselves. It is because they wanted to get self-satisfaction in terms of both profit and loss. Second, they informed that FELDA management at the study area is facing the loss of oil palm plantation income. This is due to some settlers, especially those who manage the farms themselves, who sell the palm fruit to other oil palm mills. Third, they stated that study area also is having lack of manpower at the farm. Many tonnes of oil palm fruit cannot be harvested effectively. Thus, it gives a great loss of income to the settlers and FELDA management.

The above finding shows the study area needs to fulfil certain requirements before applying SPM because not all settlers have the consensus in managing the farm. This is due to only 117 settlers (43.2%) surrendered their farm to FELDA management. Hence, appropriate initiatives should be taken to attract other 154 settlers (56.8%) to join the FELDA farm management. Besides, to avoid the loss of oil palm plantation income, FELDA management at the study area should encourage all settlers to sell their yield to FELDA oil palm mill only. Furthermore, all settlers especially the young generation should be encouraged to become successful farm operators with attractive income. This initiative is to overcome or minimise the issue of insufficient manpower or labour shortages at the farm. The issue of labour shortages was also found by Tiraeyari et al (2014) in their research. Excerpts from the FGD are listed as follow:

- a. Only 117 settlers (43.2%) surrendered their farm to FELDA management. Other 154 settlers (56.8%) managed the farm themselves.
- b. Loss of oil palm plantation income was due to settlers selling the palm fruit to other oil palm mills.
- c. Lack of manpower at the farm has caused ineffective harvest of many tonnes of oil palm fruit. It gives a great loss of income to the settlers and the FELDA management.

Conclusion

This research has achieved the objectives of study. First, it is discovered that generally, the SHBU approach is suitable for FELDA land development, particularly in Gunung Besout 03. The respondents agreed with that approach because it can benefit the settlers especially the young generation in the future. Second, it is generally found that there are potentials of adopting FELDA land development based on SHBU approach at the study area. However, every dimension needs other requirements to be fulfilled before the execution process.

The proposal of FibC dimension needs the permission from the FELDA management before it can be executed. Both FBC and FRC dimensions require vacant land. Furthermore, FBC requires a larger land area to realise it. For example, Trolak region or cluster of three FELDA schemes (e. g. a combination of Gunung Besout 01, Gunung Besout 02 and Gunung

Besout 03) can be considered to adopt that approach. FAgp dimension should be carefully done to safeguard its continuity when the participants die. Hence, the proposed FAgp projects that are run by the individuals should have their own protégés to continue the business in case of participants' death. For SPM dimension, it is important to attract all settlers to join the FELDA management to manage the farm effectively under one roof concept.

This research contributes to both new knowledge and practice. In terms of new knowledge, this research extended the work done by (Rashid et al., 2022). It is because theoretically, they proposed the SHBU approach for FELDA land development. However, this research demonstrated that approach empirically on the ground. It discovered the suitability of SHBU approach for FELDA land development, specifically at the study area. It is also found that there are potentials with some requirements (as discussed at the above paragraph) that need to be considered carefully before adopting the approach. Hence, these findings significantly contribute to new knowledge by identifying the potential application of SHBU approach for other FELDA lands development. It is important to assist FELDA land development towards improving settlers' livelihood as a whole. Furthermore, in terms of practice, these findings can be a good input to relevant parties to assist the study area in adopting the FELDA land development based on SHBU approach with some modification in the future.

This hope is in line with the aim of Malaysian government to transform the rural area into a competitive economic focal point (Rashid et al., 2021). Besides, FELDA settlers at the study area should grab various economic opportunities to improve their standard of living. In doing so, all settlers are also encouraged to strengthen their knowledge as well as skills in current information and communication technology.

This qualitative research has no intention to generalise the findings of study. Nonetheless, the researchers believe that the outcomes of the current research are meaningful. This research also has potential to be explored further by using UAV and GIS-based MCDA approaches that are linked to SHBU framework at a bigger study area such as FELDA regional or cluster levels. Geospatial analyses like classifying land potential levels and estimating HBU returns need to be conducted based on what-if scenario. Thus, a better understanding of the adoption of FELDA land development based on SHBU approach can be achieved in the future.

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