Malaysian delicacy: the Story of Patin

Zaini Embong*, Kamarul Baraini Keliwon, Yusasniza Mohd Yunus and Amizawati Mohd Amir

Faculty of Economics and Management,
Universiti Kebangsaan Malaysia
43600 UKM, 43600, Bangi, Selangor, Malaysia
Email: zainiembong@ukm.edu.my
Email: baraini@ukm.edu.my
Email: yusas@ukm.edu.my
Email: amiza@ukm.edu.my
*Corresponding author

Abstract: The 'Story of Patin' is written based on a real situation of a fish farmer, Shah. The main objective is to help students to understand and apply the relevant accounting standards based on real-life situations. The case is based on Shah's difficulty in running his patin farm which is not making much profit despite being highly demanded. Improper record-keeping could be one of the contributing factors to the lack of adequate profitability. The case walks you through the process of determining revenue and expenses for the farm. The students are also required to identify assets and other costs related to the farm. Students' feedbacks reported that the case improved their understanding of the recognition and measurement of revenue, assets, and most importantly, accounting for agriculture.

Keywords: Patin fish; accounting standard; revenue; assets; accounting for agriculture; Malaysia; fish farming; accounting cycle; business cycle; expenses; accrual.

Reference to this paper should be made as follows: Embong, Z., Keliwon, K.B., Yunus, Y.M. and Amir, A.M. (2022) 'Malaysian delicacy: the Story of Patin', *Int. J. Teaching and Case Studies*, Vol. 13, No. 1, pp.15–32.

Biographical notes: Zaini Embong is a Senior Lecturer at the Faculty of Economics and Management, Universiti Kebangsaan Malaysia. She teaches various fields of accounting, specifically financial accounting and reporting, management accounting and accounting information systems, with more than 20 years of experience. She is also engaging in financial reporting, management control, accounting system research and community-related research.

Kamarul Baraini Keliwon is a Senior Lecturer at the Faculty of Economics and Management, Universiti Kebangsaan Malaysia. She teaches various fields of accounting, specifically financial accounting and reporting, management accounting and accounting information systems, with more than 20 years of experience. She is also engaging in financial reporting, management control, accounting system research and community-related research.

Yusasniza Mohd Yunus is a Senior Lecturer at the Faculty of Economics and Management, Universiti Kebangsaan Malaysia. She teaches various fields of accounting, specifically financial accounting and reporting, management accounting and accounting information systems, with more than 20 years of experience. She is also engaging in financial reporting, management control, accounting system research and community-related research.

Amizawati Mohd Amir is a Senior Lecturer at the Faculty of Economics and Management, Universiti Kebangsaan Malaysia. She is an Associate Professor at the same faculty. She teaches various fields of accounting, specifically financial accounting and reporting, management accounting and accounting information systems, with more than 20 years of experience. She is also engaging in financial reporting, management control, accounting system research and community-related research.

1 Introduction

Agricultural activity is one of the oldest economic activities that carry varying importance in different countries. A heavily agriculture-dependent economic activity used to be a feature of an underdeveloped country. However, nowadays the developed countries, such as Australia have begun investing in the agricultural sector, thus rendering it increasingly stronger. According to Australia National Farmers Federation (https://www.nff.org.au/farm-facts.html), the agricultural sector contributes 3% of Australia's total gross domestic product (GDP). However, this contribution is steadily increasing every year wherein the farm exports earned by the country increased from $32.5 billion in 2010-11 to $44.8 billion in 2016-17.

A similar trend can be seen in Malaysia. The summary of data on GDP of Malaysia taken from the website of the department of statistics Malaysia (DOSM) (https://www.dosm.gov.my/) is presented in Figure 1.

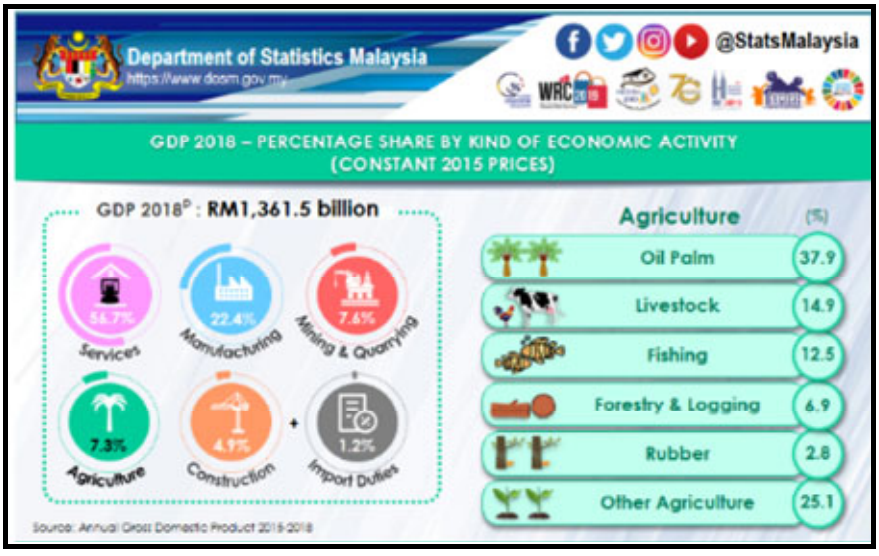
As depicted in Figure 1, in 2018, the agriculture sector contributed 7.3% equivalent to RM99.5 billion [USD23.95 billion] to the GDP almost equal to the mining and quarrying sector. The growth in the agriculture sector was obvious as compared to 2017, and the 2018 gross output showed an increase of 9.1% from RM91.2 billion [USD21.95 billion] to RM99.5 billion [USD23.95 billion]. The same trend could be observed since the year 2015 when there was an increase of 11.1% from 2015 to 2017.

The agriculture sector also provides job opportunities to 835,974 people, witnessing an annual growth of 37.1% with salaries and wages paid recorded an increase to RM10.4 billion [USD2.5 billion] as compared to RM7.90 billion [USD1.9 billion] in 2015. This sector recorded an increase in the average monthly salaries of 0.5% to RM1,519 [USD365.63] in 2017. These data indicate that the agriculture sector is an important contributor to a country's economic growth.

Despite the importance of the agriculture sector, the reporting of financial information on this industry, particularly the accounting standardisation has remained low. In line with the growth in the agriculture sector, the demand for information on the industry has increased accordingly. This elicited the attention of the entities of accounting standardisation in the agricultural sector. The standard on agriculture (IAS 41) was first

mooted in 1999 with the release of the exposure draft. Much of the discussion was on the valuation of biological assets.

Figure 1 Malaysia GDP summary (see online version for colours)



Source: DOSM

The Malaysian accounting standards board (MASB) is the body responsible for issuing and ensuring compliance with the Malaysian accounting standards referred to as the Malaysian financial reporting standards (MFRS). The MASB had announced that transitioning entities (TEs), which are entities involved in the real estate and agriculture industries, were required to apply the MFRS Framework for annual periods beginning on or after 1 January 2017. TEs comprise entities that are within the scope of MFRS 141 *Agriculture* and/or IC Interpretation 15 *Agreements for the Construction of Real Estate*, including the parent, significant investor(s), and joint venture(s).

MFRS 141 *Agriculture* was issued in November 2011 by MASB and is applicable for annual periods beginning on or after 1 January 2012. MFRS 141 is equivalent to IAS 41 *Agriculture* as issued and amended by the International Accounting Standards Board (IASB). MFRS 141 should be applied to account for the biological assets, except for bearer plants, agricultural produce at the point of harvest, and government grants when they relate to agricultural activity. Even though MFRS 141 was made effective on 1 January 2012, the TEs were given the option to apply the standard until 1 January 2017 due to several issues. The issues included the accounting treatment for bearer plants. Subsequently, there was an amendment regarding MFRS 141 and MFRS 116, issued by MASB on 2 September 2014 with an effective date of 1 January 2016.

The dynamic nature of the business environment in this era required managers and accountants to be critical, competent, and progressive. For example, accountants are no longer merely regarded as bookkeepers and auditors, but as business leaders and advisors, involved in a diverse range of ever-changing activities, including financial planning and structuring (Howieson, 2003; Jones, 2010). Given the changing business landscape, the teaching of business and accounting courses need to adapt to a new pedagogical approach

to assist the students with the development of the appropriate skills and an understanding of the principles that underpin accounting and business practice (Flood and Wilson, 2008). One of the methods that are becoming popular is the use of case studies in teaching and learning.

The case study approach is designed to reproduce a typical situation or simulation based on a real-life situation (Crowe et al., 2011). The aim is to ensure that candidates can analyse the important issue and provide solutions or advice concerning the given context. In proposing this solution, the candidates need to apply prior knowledge that they have gained throughout the courses added with further research. According to Refcco and Jaen (2015), the use of case studies in teaching and learning is effective in developing critical thinking among students. Bonney (2015) demonstrated that adopting this approach in teaching biology courses is more effective than using traditional methods of content delivery at enhancing learning. The use of cases has also been found to increase students' satisfaction, motivation, and engagement among pharmacology students (Kaur et al., 2020). The case study approach in teaching is not only proven to be effective in medical-related courses such as nursing (Li et al., 2019) but also in social studies such as in teaching about sustainable developments (Prado et al., 2020).

2 Introduction to the case

Mr. Shah, a 32-year-old fish farmer, had been rearing patin or silver catfish in cages along the riverbank of Sungai Pahang since 2001. For many years, patin had been among the delicacies sought after by Malaysians, and Pahang, particularly Temerloh town, was highly associated with patin fish. Since 2016, the demand for patin started to increase, whereas the supply of the fish was just adequate for local consumption. Despite this, Shah was wondering as to why he barely made any profit from the farm. Shah grew up handling the patin farm with his father and now inherited the business after the demise of his father. As more village-folk started getting involved in the fish farming business, Shah could not help but wonder whether he could sustain the business with such an intense competition.

On 1st June 2019, there was an offer of financial assistance from the relevant authority to boost the patin industry in Pahang. Shah was really interested in submitting his application for financial assistance. The application, however, needed to be supported with a proper accounting record. Shah became worried as there was no proper record of the business and he did not have any knowledge in record keeping. The completed application must be submitted in a month's time. Shah sought the help of his nephew, Sabri, an accounting graduate to help him with establishing the accounting record of his patin farm.

3 Patin, the delicacy of Temerloh town of Pahang, Malaysia

Patin or silver catfish is in the same family as catfish with the scientific name of Pangasius hypophthalmus. The normal habitats are rivers and lakes with the appropriate water quality. The quality of water is a significant factor in the growth and taste of patin. As such, Sungai Pahang is well known for the produce of patin fish. The wild patin could be fished from the river and said to have the best taste and hence could fetch up to

RM180 [USD40.33] per kilogram. Patin is considered a delicacy by many Malaysians, and the demand is steadily increasing every year. To keep up with the increasing trend, the patin is also farmed commercially. There are two methods of farming the patin fish, namely in a manmade pond and in cages placed along the riverside. According to patin lovers, the taste of patin meat is different, depending on the way it is farmed. Those farmed in cages along riverside tasted better than those in the pond. The depth of the river and the quality of water assume great importance in having the fish farmed in cages along the riverside. Sungai Pahang is known to have a successful caged patin farm industry in Peninsular Malaysia.

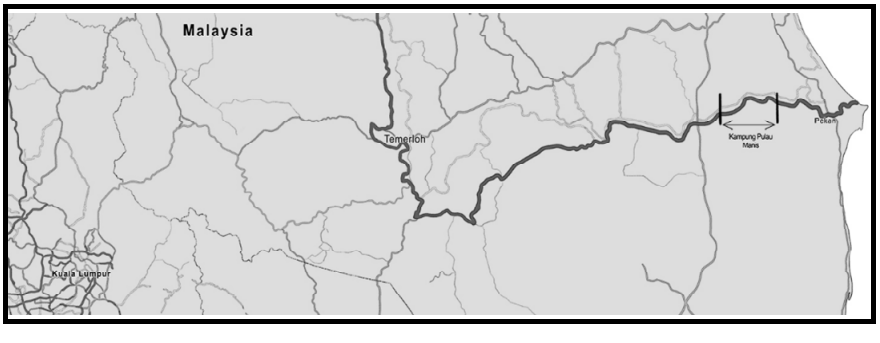
Sungai Pahang, the longest river in Peninsular Malaysia, flows through the state of Pahang. Pahang is one of the states on the east coast of Malaysia, about 4 hours journey from the capital, Kuala Lumpur. The river begins at the confluence of the Jelai and Tembeling rivers on the Titiwangsa Mountains and drains into the South China Sea with a total length of 459 km. The widest cross-section of Sungai Pahang is about 120 to 150 metres between Temerloh and Chenor. The depth ranges from 0.5 to 3 metres during the dry season which could increase up to one to ten metres during the wet season. The map of Malaysia shows the flow of Sungai Pahang in Figure 2. The darker line in the map shows the flow of Sungai Pahang. The dotted box indicates the stretch where Shah's patin farm in Kampung Pulau Manis is located.

Every part of the river is unique in terms of its water flow, terrain, and current. The patin fish are commonly found in the part where the river flows from Temerloh to Pekan; as such, Temerloh is synonymous with Patin Masak Tempoyak (patin fish cooked in gravy mixed with fermented durian). The supply of wild patin fish (fish that lived freely in the river, versus those reared in cages) is very limited and declining. To fulfil the growing demand for patin, local aquaculture farmers have started raring the patin fish in cages along the riverside of Sungai Pahang since 2008. Pekan, a royal town of Pahang is located at the estuary of Sungai Pahang. The riverbanks of Sungai Pahang between the town of Temerloh and Pekan are utilised for patin farming. Kampung Pulau Manis is one of the famous locations for caged patin farms. The map in Figure 3 indicates the location of Temerloh, Pekan, and Kampung Pulau Manis along the Sungai Pahang River.

The development of the aquaculture industry with a focus on patin and tilapia fish received support from the local government. As reported by a daily tabloid, Sundaily dated 11th September 2017, The Agriculture and Agro-based Industry Ministry targeted to produce aquaculture fish products valued at over RM270 million [USD64.99 million] in 2017 from Pahang. Datuk Seri Tajuddin Abdul Rahman, the deputy minister, pointed out that Temerloh had produced over 14,000 tonnes of fish of various species in 2017, including the Patin and Tilapia from its 2,018 cage culture units run by 283 operators. In a press conference held after a meeting with Temerloh fishermen, he said, "Cage fish culture in Temerloh, developed since 2008, is one of the biggest and most successful in Malaysia, and has lent its trademark to the district. We want the production of Temerloh Patin to rise to 20,000 tonnes by 2020" (https://www.thesundaily.my/archive/pahang-aquaculture-fish-production-targeted-more-rm270m-year-FTARCH480971). To encourage this industry's growth, assistance in terms of financial and expert advice was offered by the relevant authorities such as the agriculture and agro-based industry ministry as well as local agencies.

Figure 2 Map of Malaysia

Figure 3 Location of Pulau Manis



The prospect of patin fish farming was tremendous as the consumption of fish steadily increased over the years (Rahman et al., 2020). Patin was loved for its unique taste and texture. Moreover, patin was also nutritious compared to other freshwater fish. Its protein content of 13% was very high, similar to the protein content of marine fish such as scad and tuna (Rahman et al., 2020). According to Rahman et al. (2020, p.1), "Fish protein

provides essential amino acids, while fish fat is rich in polyunsaturated fatty acids (PUFAs), which have beneficial effects on many diseases such as heart disease, diabetes, cancer, and inflammatory disease." The fatty acid content of patin is about 14.07% (Wan Rosli et al., 2012) with docosahexaenoic acid (DHA) content of 7.13 μg/g and EPA (eicosapentaenoic acid) of 1.55 μg/g which were 4.7% and 0.31% higher than other freshwater fish. The content of oleic acid, a kind of unsaturated fat that was good to reduce cardiovascular risk, was also high at more than 20% (Nurilmala et al., 2015). The cholesterol content was only 37.1–49.1 mg/100 grams of fish meat (Osman et al., 2001). Given the increasing demand for patin, its nutritional value, and taste, the future of the patin business was promising.

4 Shah, the patin farmer

Sitting at the bank of Sungai Pahang one evening as usual after a long day's work, Shah thought about his patin fish farm. He was informed about the opportunity of funding offered by the local authority to patin farmers the day before. The offer could be availed for one month ending 30th June 2019, and that was only two weeks to go. That offer had led him to think more seriously about his patin farm. He had been handling the farm for 16 years and nothing had changed much. Shah began by assisting his father during his school days, but now owned the farm after the demise of his father. The entire family lived on the proceeds from the farm. The fish were farmed in cages placed along the riverside. However, the land along the river where the cages were placed belongs to another villager, Pak Rashid. To get access to the riverside, his father asked for permission from Pak Rashid; otherwise, they would be considered trespassing although the riverbank itself was reserve land that belongs to the state government. Pak Rashid and his father were good friends, hence they had worked out a verbal arrangement where his father needed only to pay a minimal access fee of RM100 [USD24.07] per month. Those were the days where everyone in the village used to live like brothers and sisters.

16 years had passed, and the atmosphere in the village had somehow changed. Born in 1985, Shah had lived in Kampong Pulau Manis all his life. Located along Sungai Pahang, Kampung Pulau Manis was prone to flood from the river overflow. From what Shah remembered, the village was not free from flood for even a single year. Amazingly, the source of income for the villagers mainly came from the river. Years ago, villagers used to fish for river life such as varieties of fish, prawns, lobsters, and mussels. Hence, education had never been the main focus of the villagers, including Shah. Then he left school at the age of 16 after the Penilaian Menengah Rendah (PMR) examination. Since then, he had been working with his father on the patin fish farm until today.

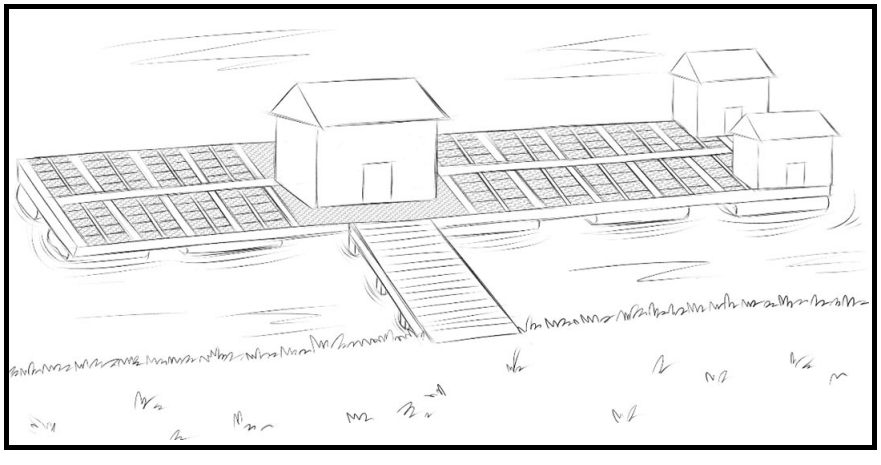
Contemplating the offer, Shah made a rough calculation in his head. The cost of running his patin farm was a little bit more than RM100,000 [USD24,070.29] per month, with the largest chunk for fish feed. If he managed to secure the funding offered by the local authority, he could improve his farm and replace several cages that were direly in need of replacement. The application needs to be supported with proper documentation, especially the accounting record. Shah told himself; 'I am not educated; all I know is how much money I got and how much I spent. How on earth am I going to come up with a proper accounting record of my farm?' Shah had no other training besides how to run a patin farm in cages. His encounter with numbers was limited to secondary school and he was not so good at that too. His shy and timid personality also made it difficult for him to

interact with others and ask for help, as a result of which he was really praying hard for help. His deep thinking was interrupted by a voice greeting him. It was Sabri, his nephew who had just completed his degree in accounting at one of the public universities. Shah felt that his prayers had been answered. From the conversation with Sabri, Shah learnt that he would start working in one of the big audit firms in July. In the meantime, he would help his father who is Shah's older brother with his shop. This prompted Shah to tell Sabri about his situation. Sabri agreed to help Shah and promised to come back the next day to start collecting relevant information about the latter's patin fish farm.

4.1 Shah's patin farm

Shah's father started the patin caged farm at Sungai Pahang in 1982 with only 20 cages. The number of cages kept increasing on an annual basis. When his father passed away five years ago, the number of cages stood at 50. Over time, the number of cages had increased to 75. The cages could be moved from one location to another, depending on the depth of the riverside. The height of the cage was 10 feet (or slightly more than 3 metres); hence, the riverside needed to be at least 3-metre-deep to enable Shah to operate his patin farm. The farm was currently operated at a second location after being moved from the original location when was established in 1982. The change of location took place a year prior to the demise of Shah's father because the location where they originally operated was no longer suitable. The erosion of the riverbank as well as sedimentation of the river had made the riverside shallower and not suitable for a fish farm. The farm was operating at the current location for six years. Some cages and other facilities were brought from the old location and some were built and acquired at the new location.

Figure 4 Layout of the cage



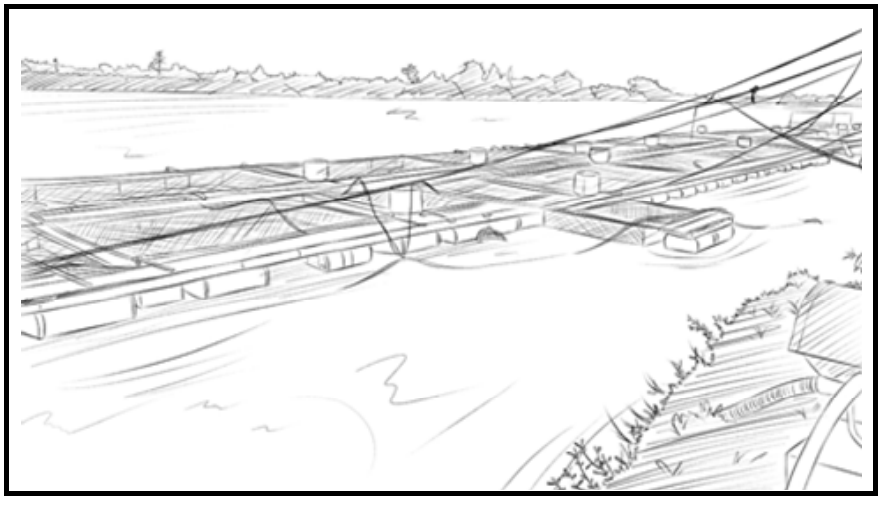
Shah need to pass through Pak Rashid's land to get to the riverside where the farm was currently located. Pak Rashid was a friend of Shah's father and there was an agreement between them to let Shah's father pass through his land for RM100 [USD24.07] per month access fee. After Pak Rashid died in 2016, the land was inherited by Pak Rashid's daughter, Munah. She demanded a higher access fee, and the matter was still under

discussion. Based on the discussion between them, Shah estimated the fee to be increased as much as RM200 [USD48.14] per month.

The cage facility was arranged in grid form. In the middle, a structure was built as a storage facility. Two smaller huts were also built at one end of the grid. Shah divided the grid into two areas, labelled as Area A, which was located to the left of the storage facility, and Area B at the other end. Area A comprised four sections that housed ten small cages each and Area B consisted of six sections housing six large cages each. The size of small cages was 10-feet by 15-feet by 10-feet (10' × 15' × 10'), whereas the size of large cages was 10-feet by 20-feet by 10-feet (10' × 20' × 10'). Figure 4 illustrated the layout of the cages.

These cages were attached to wooden platforms that served as the walkway. The platforms were kept afloat using a float drum filled with carbide. A sketch of Shah's farm facility and the sample of cages were shown in Figures 5 and 6, respectively.

Figure 5 Shah's farm facility

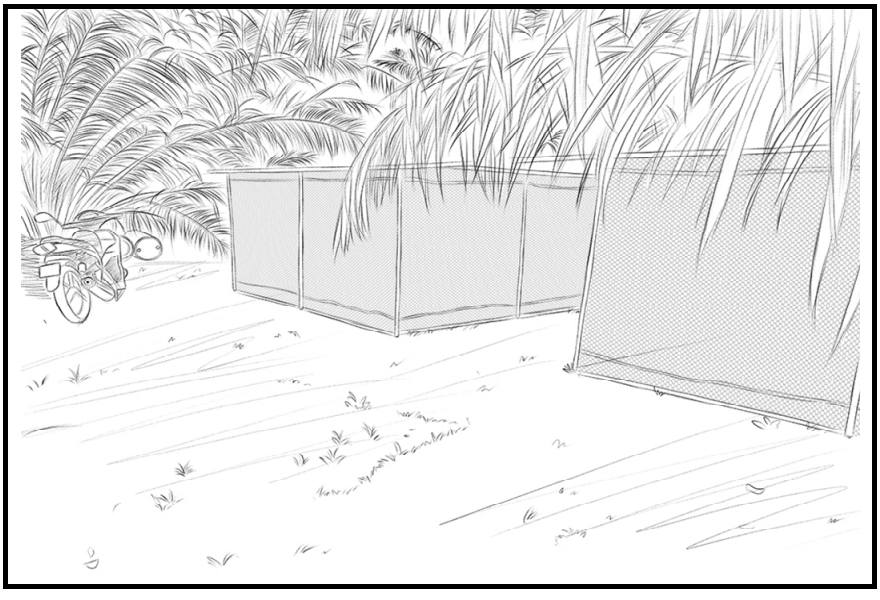


The cages, the platform, and the float had different life span. After a thorough investigation, Sabri listed the information he gathered in Table 1. Meanwhile, the details of assets are listed in Table 2.

Table 1 Summary of farm facilities

Facility	*Quantity*
Storage facility:	
Large	1
Small	2
Cages:	
Small (10' X 15' X 10')	40 (placed in 4 sections of 10 per section)
Large (10' X 20' X 10')	35 (placed in 6 sections of 6 per section)
Buoys/float drum (each cage requires about 9 drums)	680

Figure 6 Sketch of cages



To make a proper record, Sabri knew that he needed to refer to the relevant accounting standards adopted in Malaysia, namely MFRS, which was equivalent to IFRS. The relevant standards can be accessed from MASB website, http://masb.org.my/. Next, Sabri needed to check on the biological assets of the farm, namely the patin fish.

4.2 From seeds to harvest

The size of the cage determined the capacity of fish to be farmed. Each small cage could accommodate around 1,500 fish seeds and the larger one could accommodate around 2,000 seeds. The seeds were bought from a breeder in Lanchang, Pahang. The price of these fish seeds was based on the size of the cage. It was sold at a price of RM0.10 [USD0.03] per inch. The ideal size of fish seeds to be bought was about three inches that cost RM0.30 [USD0.07] per seed. Shah would be able to utilise the complete capacity of the cage. The seeds were bought in batches and released based on sections. Shah bought the seeds every month starting January. The last two months of the year, namely, November and December were rainy seasons and floods, were expected. Hence, Shah would not buy any new seeds to reduce his losses. In January, Shah released the seeds in cages located at Section 1, February in Section 2 until Section 10 in October. This way, the fish could be harvested every month in batches according to sections. Each month, Shah could harvest from 10 small cages or 8 larger ones.

The life cycle of the patin was six months. From seeds with three inches in length, the fish could be harvested after six months, with an average weight of 700 grams per fish. The survival rate to maturity was about 50%. Hence, on average from the 1,500 fish seeds released into each small cage and 2,000 seeds into a larger one, Shah expected only 750 and 1,000 seeds to be harvested, respectively. The mortality rate was higher at the beginning of the fish lifecycle as they were more fragile and vulnerable to predators and elements. The survival rate by months was as follows:

- After 1st month 80%
- 2nd month 70%
- 3rd months 65%
- 4th month 60%
- 5th month 55%
- 6th month 50%.

Factors that could affect the survival of the fish include water quality, predators such as water beavers, and disturbances that might cause the fish to sulk. Sulking patin fish would starve themselves to death. Among the causes was the fisherman's activity near the cage.

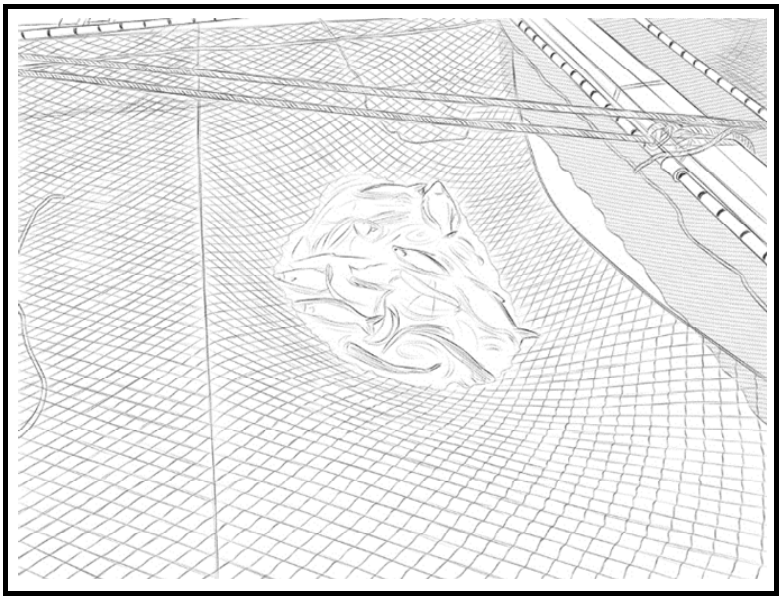
Table 2 Details of assets

	Quantity	*Cost per unit (RM)*	*Date acquired*	*Life span*
Small cages:	40		Sections 1 and 2:	
Steel frame		5,000	1st Jan 2013	7 years
Net		3,000	Sections 3 and 4: 1st July 2017	4 years
Large cages:	35		Sections 5 and 6:	
Steel frame		6,000	1st July 2017	7 years
Net		4,000	Sections 7–10: 31st Dec 2018	4 years
Note: The net was changed every 4 years. The metal frame might be useable longer than the projected lifespan.				
Buoy/drum floats	680	23	1st Jan 2018 All acquired after the big flood in 2017	4 years
Note: The drum floats were filled with carbide that need to be refilled every 3 months. The cost of carbide per drum was RM1.				
Main storage facility	1	15,000	1st Jan 2019	10 years
Smaller storage facility	2	10,000	1st Jan 2018	10 years

The patin fish were fed with pellets. For each cage, 120 bags of pellet were needed until the fish were harvested. The cost of pellets was RM65 [USD16] per bag. The same pellets were used throughout the life cycle of the patin. Besides pellets, patin also fed on small river lives such as small fish, shells, algae, and plankton. The patin needed to be fed at regular intervals to ensure healthy growth. Shah fed them twice a day; at 6.30 in the morning and at 5.30 in the evening. To reduce food costs, the patin fish could be fed with residuals from market poultry such as chicken liver and fat as well as fish guts. However, the type of food being fed affected the taste and texture of the patin. To ensure the quality of patin meat, Shah only fed his patin with pellets. Figures 7 and 8 illustrated the feeding activities of the fish.

Figure 7 Shah feeding the fish

Figure 8 Fish feeding on pellet



Due to the size of the farm, Shah hired four workers to feed the fish as well as perform maintenance work. The workers were paid RM1,200 [USD289] per month each. No other benefits were given to these workers, but they were allowed two weeks of leave in a year.

4.3 From farm to market

Shah's patin fish was among the most sought after in the vicinity of Temerloh. He had loyal customers who owned restaurants that sold patin dishes. These customers normally bought in large quantities; hence, they were considered wholesalers. Currently, Shah sold the patin fish directly to wholesalers and retailers at RM10 [USD2.41] per kilogram. These customers would come and collect the fish early in the morning. Shah found it to be difficult to increase the price of patin because these were his loyal customers. Besides, the competition was also stiff due to too many farmers located along the riverside of Sungai Pahang.

Shah could get a higher price for the patin if he sold it to hotels in Pekan and Temerloh. He could easily get RM14 [USD3.37] per kilogram; however, he had to deliver the patin fish to the hotel. The distance from his farm to Pekan was about 42 kilometres and to Temerloh about 140 kilometres. Hence, although he could get a higher price selling the fish to hotels, this would incur him additional costs.

On average, the sale of patin fish was about 300 kilograms per day, of which 80% was sold to wholesalers. The term of sale included the right of return. There was probability that the fish had turned rotten, which would only be known when the fish was gutted. If this was the case, the buyer would return the patin fish and Shah would have to replace it. Past experience indicated that about 7% of the sales were returned.

4.4 Teaming up for patin

After gathering information about Shah's farm for one week, Sabri was able to understand and appreciate the industry better. 'This was a very good experience that I would not have got anywhere else,' thought Sabri. The whole experience did not only enable Sabri to apply the knowledge he learnt at the university but more importantly, he now appreciated the hard work put in by these farmers. These thoughts motivated Sabri to do his best to help Shah.

In the final stage of gathering information, Sabri also found out that Shah owned a small pickup truck that was used for the business. The monthly cost related to the truck including petrol and maintenance was estimated to be RM150 [USD36.11], all paid by Shah out of his own pocket. The truck was purchased seven years ago with proceeds from the patin sales. The estimated life of the truck was 15 years.

Shah had never taken any loan for the farm. However, he did receive 30 days' credit from the supplier of pellets and 14 days' credit for the fish seeds. Sales of patin fish were done on a cash basis and the proceeds were banked into Shah's saving account the next day. All his family expenditures were made using cash from the same account.

Having gathered all this information, Sabri was very confident that he could help Shah prepare proper financial statements for the business. Sabri also planned to make sure that his work would help Shah secure the funding offered by the local authority. He also promised Shah that he would help Shah in establishing a proper accounting record for his business. This would make it easier for Shah to track the performance of his

business. Sabri was even more motivated in the hope that he would be helping Shah improve his business and livelihood.

5 Key questions

In reference to patin farming:

Question 1 Differentiate between the accounting cycle and the operating cycle.

Question 2 Discuss in detail the following based on MFRS141

a agricultural activity.

b agricultural produce.

c biological asset.

d biological transformation of ikan patin.

e components of cost to sell.

Question 3 Discuss in detail, items that can be classified as assets based on MFRS116.

Question 4 Discuss in detail, the recognition of revenue based on MFRS15.

Question 5 Discuss relevant disclosure related to biological assets in the financial statement.

Question 6 Prepare a complete financial statement for Shah Patin Farm.

Acknowledgements

The authors would like to acknowledge Universiti Kebangsaan Malaysia for the financial assistance in making this research possible through grants coded EP-2017–016 and GGPK-2016-003. A note of appreciation is extended to the students from 2017/2018 class of integrated case study course for their feedback and cooperation.

References

Bonney K.M. (2015) 'Case study teaching method improves student performance and perceptions of learning gains', *Journal of Microbiology & Biology Education*, Vol.16, No. 1, pp.21–28, https://DOI.org/10.1128/jmbe.v16i1.846

Brannen, M.Y. and Thomas, D.C. (2010) 'Bicultural individuals in organizations – implications and opportunity', *International Journal of Cross-Cultural Management*, Vol. 10, No. 1, pp.5–16, DOI: 10.1177/1470595809359580.

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., and Sheikh, A. (2011) 'The case study approach', *BMC Medical Research Methodology*, Vol. 11, pp.100, https://DOI.org/10.1186/1471-2288-11-100

Department of Statistics Malaysia (DOSM) [online] https://www.dosm.gov.my/ (accessed 30 September 2020).

Flood, B. and Wilson, R.M., (2008) 'An exploration of the learning approaches of prospective professional accountants in Ireland', *Accounting Forum*, Vol. 32, No. 3, pp. 225–239, DOI: 10.1016/j.accfor.2008.01.001.

Howieson, B. (2003). 'Accounting practice in the new millennium: is accounting education ready to meet the challenge?', *British Accounting Review*, Vol. 35, pp.69–103, DOI:10.1016/S0890-8389(03)00004-0.

Jones, A. (2010). 'Generic attributes in accounting: the significance of the disciplinary context', *Accounting Education*, Vol.19, pp.5–21, DOI: 10.1080/09639280902875523.

Kaur G., Rehncy J., Kahal K.S., Singh J., Sharma V., Matreja P.S., and Grewal H. (2020) 'Case-based learning as an effective tool in teaching pharmacology to undergraduate medical students in a large group setting.' *Journal of Medical Education and Curricular Development*, Vol. 7, pp. 1–6, DOI: 10.1177/2382120520920640. PMID: 32435693; PMCID: PMC7223199.

Li, S., Ye, X., and Chen, W. (2019). 'Practice and effectiveness of 'nursing case-based learning' course on nursing student's critical thinking ability: a comparative study', *Nurse Education in Practice*, March, Vol. 36, pp.91–96.

Malaysian Accounting Standard Board (2012) *MFRS 141 Agriculture* [online] https://www.masb.org.my/pdf.php?pdf=BV2018_MFRS%20141.pdf&file_path=pdf_file (accessed 30 September 2020).

Nurilmala,N., Tati Nurhayati, Ayu Ginanjar Syukur, Yon Vitner, Syamsul Bahri Agus and Tatag Budiardi. (2015) 'Evaluation of nutritional and color on Indonesian and imported patin fish (Pangasius sp.,) Fillets', *Advance Journal of Food Science and Technology*, Vol. 8, No. 8, pp.576–582.

Prado, A.M., Arce, R., Lopez, L.E., García, J., and Pearson, A.A. (2020) 'Simulations versus case studies: efectively teaching the premises of sustainable development in the classroom', *Journal of Business Ethics*, Vol. 161, pp.303–327, https://DOI.org/10.1007/s10551-019-04217-5

Rahman, M.M., Siti Hajar and Yunus, K. (2020). 'Comparative analysis of chemical composition of some commercially important fishes with an emphasis on various Malaysian diets', *Open Chemistry*, https://DOI.org/10.1515/chem-2020-0152

Refcco, E. and Jaen, M.H. (2015). 'Case method use in shaping wellrounded Latin American MBAs', *Journal of Business Research*, Vol. 68, No. 12, pp.2540–2551.

The Association of Chartered Certified Accountants Report (2009) *ACCA Members survey: Complexity in Financial Reporting*, Certified Accountants Educational Trust (London).

Wan Rosli, W.I., Rohana, A.J., Gan, S.H., Noor Fadzlina, H., Rosliza, H., Helmy, H. Mohd Nazri, S., Mohd Ismail, I., Shaiful Bahri, I., Wan Mohamad, W.B. and Kamarul Imran, M. (2012) 'Fat content and EPA and DHA levels of selected marine, freshwater fish and shellfish species from the east coast of Peninsular Malaysia', *International Food Research Journal*, Vol. 19, No. 3, pp.815–821.

Teaching notes

Teaching objectives

The specific teaching objectives for the case are as follows:

1 To understand the recognition and measurement of revenue based on IFRS 15 in reference to patin farming.

2 To understand the recognition and measurement of assets for patin farming based on IAS 41 and IAS 16.

3 To understand the disclosure of assets based on IAS 16 and IAS 41.

Target audience and suggested courses

This case is primarily designed for the final year accounting program and it is recommended for an integrated case study course.

Case questions

In reference to Shah Patin Farm:

a Differentiate between the accounting cycle and the operating cycle.

b Discuss in detail, the following based on MFRS141:

1. agricultural activity.
2. agricultural produce.
3. biological asset.
4. biological transformation of patin fish.
5. components of cost to sell.

c Discuss in detail, items that can be classified as assets based on MFRS116.

d Discuss in detail, the recognition of revenue based on MFRS15.

e Discuss relevant disclosure related to biological assets in the financial statement.

f Prepare the financial statement.

Answer each question raised at the end of the case study

The question raised in the case study can precisely be answered from the following.

1 Calculation of sales revenue:

a Can be calculated based on the average sales per year (in kg), multiply by the price per kg according to proportion to wholesales and hotel.

b Should encourage students to calculate based on actual production. In this way, the students can appreciate the difference between the accounting cycle and the operating cycle.

- There are two operating cycles in one accounting period if the financial statements are prepared every year.
- Students need to detail out the production and sale of the patin fish according to the cages and sections.

Example of calculation:

Month	*Total fish harvested*	*(700gram per fish)*	*Wholesaler (80%)*	*Hotel (20%)*	*Total*
		Total harvest (kg)	*RM*	*RM*	*RM*
July	7,500	5,250	42,000	14,700	56,700
Aug	7,500	5,250	42,000	14,700	56,700
Sept	7,500	5,250	42,000	14,700	56,700
Oct	7,500	5,250	42,000	14,700	56,700
Nov	6,000	4,200	33,600	11,760	45,360
Dec	6,000	4,200	33,600	11,760	45,360
Jan	13,500	9,450	75,600	26,460	102,060
Feb	13,500	9,450	75,600	26,460	102,060
March	13,500	9,450	75,600	26,460	102,060
April	12,500	8,750	70,000	24,500	94,500
May	-	-	-	-	-
June	-	-	-	-	-
Total	95,000	66,500	532,000	186,200	718,200

Note: RM1 is approximately equal to USD 0.24

c Among the things to highlight is the treatment of returns on sale:

- Should it be deducted from the gross sales?
- Or does it need to be treated as an additional cost of sales?

2 Cost of sales:

a Direct costs

- Fish seeds
- Pellets

b The calculation can be made for the total year and reallocate the cost of sales to the cages from which the fish are harvested to be sold.

c Or students can calculate the cost of pellet and fish seed per fish and multiply by the number of fish harvested to get the total cost of sales.

d There will be variations in the answers depending on how the students treat the dead fish.

3 Non-current assets:

a The method used to depreciate can vary but most students will use the straight line method.

b The calculation on depreciation of cages, buoys, and storage facilities is straightforward.

c Notably, the steel frame and netting of the cages need to be depreciated separately.

d Depreciation on the truck depends on the assumption of the cost of the truck when purchased.

4 Other costs:
   a Access fee
   b Salary
   c Delivery cost
5 To complete the statement of financial position, students need to make an assumption on the bank/cash balance of the business as well as to calculate the owner's capital.
6 Some information is not given to encourage students to think of the possibilities and to simulate real-life situations where information is sometimes not made available.

Teaching and board plans

The case will be given to students one week in advance. The case will then be discussed in a three-hour meeting. This first session is a guided group discussion where the instructor facilitates students to explore the case and have a better understanding of the case. The groups will then be given one week to discuss and prepare a report answering all the questions given in the case. Each group will be allocated 15 minutes to present their findings in the second session. The instructor will give comments on each presentation. Following the presentation, the instructor will wrap up discussions in 30 minutes.

Suggested time allocated for discussion on the case during the first session are as follows:

Question		*Time Allocated*
a	Re-read the case	15 minutes
b	Differentiate between the accounting cycle and the operating cycle.	15 minutes
c	Discuss in detail the following based on MFRS141:	60 minutes
	1 agricultural activity.	
	2 agricultural produce.	
	3 biological asset.	
	4 biological transformation of patin fish.	
	5 components of cost to sell.	
c	Discuss items that can be classified as assets based on MFRS116.	20 minutes
d	Discuss recognition of revenue based on MFRS15.	15 minutes
e	Discuss relevant disclosure related to biological assets in the financial statement.	15 minutes
f	Discuss preparation of the financial statement.	30 minutes
g	Conclude	10 minutes