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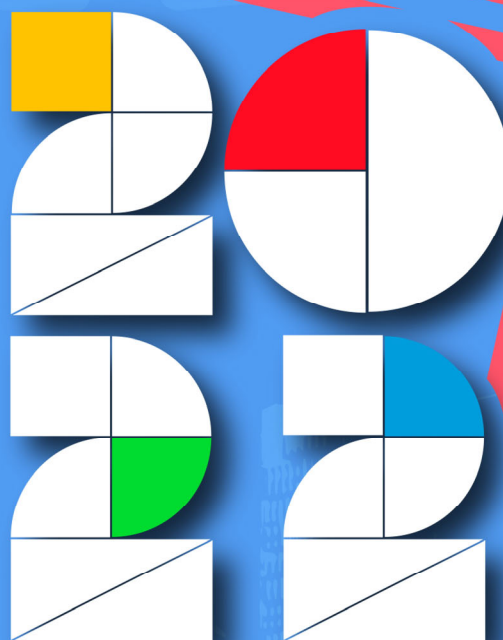
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Reengineering
Knowledge &
Creativity for
Global Excellence

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June



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TeSSH 2022***

**Reengineering Knowledge and Creativity
for Global Excellence**

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30 June 2022
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Foreword

The papers compiled in these e-proceedings are papers presented online at Technology, Science, Social Sciences and Humanities International Conference 2022 (TeSSH I 2022) held on 30 June 2022 at Universiti Teknologi MARA (UiTM) Cawangan Kedah, Kedah, Malaysia. With the theme, ***Reengineering Knowledge and Creativity for Global Excellence***, the conference has brought together presenters of diverse background who shared their conceptual and empirical papers in broad areas that are subsumed under the fields of Technology, Science, Social Sciences and Humanities. These e-proceedings comprise current researches that were undertaken with the rigorous endeavour of knowledge enhancement to ensure that the world of academia will continue to flourish. It is thus hoped that readers will significantly benefit from knowledge contained in these proceedings.

TeSSH I 2022 and these e-proceedings would not have been possible without the great efforts from the presenters, and the generous support from the TeSSH I 2022 committee members and the Rector of UiTM Cawangan Kedah, Prof. Dr. Mohamad Abdullah Hemdi. A heartfelt gratitude is extended to all involved. It is hoped that these e-proceedings will be an impetus to stimulate further studies and research that benefit the society at large.

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Accounting For Agriculture in Malaysia: A Special Attention to Aquaculture

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ABSTRACT

In Malaysia, the aquaculture industry has been identified as a vital and priority sector in the economic development of the country. The purpose of the study is to examine the accounting practice among aquaculture listed companies in Malaysia. Two aquaculture listed companies were selected as samples. A content analysis was utilised to investigate the aquaculture listed companies' accounting practices for aquaculture. The objective of the study was satisfied by examining how aquaculture industry was reported in the annual reports of these selected companies. In particular, the study examined the listed companies' accounting practices for definition, recognition, measurement, presentation, and disclosure of aquaculture. The main findings revealed that the accounting practice of the two companies with regards to definition, recognition, measurement and presentation and disclosure of biological asset-aquaculture are in line with requirements of MFRS 141 Agriculture. The results of the current study contributed to knowledge in agriculture accounting. The results will provide guidelines of accounting practice on aquaculture to new aquaculture listed companies. The findings are also expected to contribute to the regulatory improvement towards adoption of MFRS 141 by companies in Malaysia.

Keywords: Accounting practice, biological asset, Aquaculture, Malaysian listed companies

INTRODUCTION

Aquaculture, the aquatic equivalent of agriculture, has exploded in popularity in recent decades, producing nearly as much fish and shellfish as fisheries. In the future, aquaculture will be the primary means of collecting additional food from our aquatic surroundings. According to Troell, Kautsky, Beveridge, Henriksson, Primavera, Ronnback, Folke & Jonell (2017), aquaculture has an impact on biodiversity because it consumes resources such as land (or space), water, seed, and feed, transforms them into societally valuable products, and then releases greenhouse gases and wastes from uneaten food, faecal, and urinary products, chemotherapeutants, as well as

microorganisms, parasites, and feral animals into the environment. From 7 billion in 2011, the world's population is expected to grow to 9 billion by 2050 (Teh, 2012). As a result, as the human population grows, so does the amount of food consumed. Malaysian aquaculture is at the forefront of fish production for the country's food security, (Jumatli & Ismail, 2021).

The Malaysian Financial Reporting Standard (MFRS) 141 is a set of financial reporting requirements for Malaysia. Malaysia created agriculture, including aquaculture, to deal with the accounting and disclosure of biological assets and agricultural produce in agriculture activities. A biological asset is a living plant or animal, and agricultural output is the harvested product of the entity's biological asset. Companies must value biological assets at their fair market value minus the cost of sale, according to the standard. If fair value is not available, companies use cost less accumulated depreciation and accumulated impairment loss as a measurement. However, measuring fair value poses significant challenges due to the inherent risk in using judgement that can be construed as providing subjective rather than objective financial information. Fair value is defined under MFRS 13 *Fair Value Measurement* as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Extensive disclosures about fair value are required to help users of financial statements assess valuation techniques and inputs used. Determination of fair value, especially in the case of biological assets in aquaculture industry could be challenging and in some cases is not straightforward since there might be a tendency to use shortcuts in the valuation process. The aim of the study is to examine how the aquaculture industry was reported in the annual reports of listed companies. In particular, the study examined the listed companies' accounting practices for definition, recognition, measurement, presentation and disclosure of aquaculture.

LITERATURE REVIEW

Aquaculture has become the world's fastest growing food-production technology. Seafood is a main source of animal protein in many parts of the world, particularly in developing countries. Seafood is an important part of the world's food-production system, particularly with respect to animal proteins. The world's population in 2017 was approximately 7.5 billion people, and by 2050, it is expected to increase by at least 30 percent to nearly 10 billion people. Sustaining this growing population will require a commensurate increase in food production through agriculture, capture fisheries and aquaculture (Noakes, 2018).

Depending on species and country, farmed seafood contributes to food security directly through domestic consumption, or indirectly through economic growth from exports. Modern aquaculture is enabled by transferring knowledge from terrestrial animal production and from developing new technologies to create substantial productivity growth and production cost reductions (Anderson et al., 2017). Sustainable farming is needed to ensure the growth in the aquaculture industry.

The government of Malaysia had introduced Code of Conduct for Aquaculture called Good Aquaculture Practices (GAqP) for the various aquaculture systems as guidelines to advocate sustainable and best aquaculture practices. GAqP are a series of considerations, procedures, and protocols for aquaculture production and expansion, product quality, safety, and environmental sustainability. Kamaruddin and Baharuddin (2014) found that farmer who has vast experience in the field of aquaculture, has a high level of technical knowledge, and has attended training related to aquaculture, would have the potential to increase the level of practice of GAAP and thus ultimately increase the farmer's income. Adobor (2019) stated that lack of institutional support in the form of training in the appropriate management of a new technology adversely affected the farmer-entrepreneurs and their businesses. Agricultural transformation, innovation and technology are potential research areas, especially in developing and emerging economies (Umar et al., 2021).

RESEARCH METHOD

Researchers gathered data from published financial statements using a secondary data collection strategy (annual reports). Aquaculture companies registered on the Bursa Malaysia make up the population of this study. Purposive sampling was used to pick a representative sample from the company's population. Between 2021 and 2022, the study took place. The analysis included two (2) aquaculture businesses in total. The company's annual reports for 2021 and 2022 were the primary data source. The researchers in this study examined annual reports from publicly traded firms since these reports are governed by rules and regulations that necessitate strict adherence, resulting in high-quality reporting that meets the financial reporting standards. The companies' mandated disclosure of biological assets was identified and examined using descriptive analysis.

RESULT AND DISCUSSION

Introduction

Biological assets, aquaculture, and fish

The number of mentions indicate the importance of the terms to the companies. The term biological assets were mentioned sixteen (16) times in the 2021 and 2022 annual report of XL Holdings Berhad (XL) and twenty-nine (29) times in Borneo Harvest Aqua Berhad (BAHVEST) annual report 2021. The term aquaculture was mentioned eight (8) times in the 2021 annual report and four (4) times in the 2022 annual report of XL and forty-one (41) times in BAHVEST 2021 annual report. The term fish was mentioned one hundred thirty-nine (139) times in the 2021 annual report and one hundred twenty (120) times in the 2022 annual report of XL and eighty-four (84) times in BAHVEST 2021 annual report.

Definition of biological assets and aquaculture

The first objective of the study is to examine the accounting practice of aquaculture companies in the definition of biological assets.

Broodstocks are fishes/crabs held for reproduction purpose, not intended for sale and classified as non-current assets (BAHVEST, 2021). Broodstock, or broodfish, are a group of mature individuals used in aquaculture for breeding purposes. Broodstock can be a population of animals maintained in captivity as a source of replacement for, or enhancement of, seed and fry numbers (Waples & Do, 1994). These are generally kept in ponds or tanks in which environmental conditions such as photoperiod, temperature and pH are controlled. Such populations often undergo conditioning to ensure maximum fry output. Broodstock can also be sourced from wild populations where they are harvested and held in maturation tanks before their seed is collected for grow-out to market size (Fast, 1994) or the juveniles returned to the sea to supplement natural populations (Waples & Do, 1994).

According to MFRS 141, a biological asset is a living animal or plant. XL Holding Bhd (2021, 2022) described biological assets of the company as comprising broodstocks and fishery livestock in its notes to financial statement, BAHVEST (2021) on the other hand described its biological assets as represented by broodstocks, fishery livestock, fish fry and crab. So, the description made by the two companies are not contradicting with the definition of biological asset as suggested by MFRS 141 as broodstocks, fishery livestock, fish fry and crabs are living animals and therefore, they are categorised as biological assets.

Recognition of biological asset - broodstock, fishery livestock, fish fry and crab

The second objective is to examine the accounting practice of aquaculture companies in recognition of biological assets. The recognition criteria for biological assets according to MFRS 141 are: the business controls the biological assets because of a past event; it is probable that the

business will get future economic benefits from them; and the fair value of the assets can be measured reliably. Even though the two companies do not mention this anywhere in their annual report, the recognition of revenue from sales of the biological asset and fair value gain reported in the account indicate benefits have been obtained from those biological assets.

The broodstock and fishery livestock of XL are initially recognised at fair value less cost to sell. They are also subsequently measured at fair value less cost to sell (XL 2021, 2022). This method of recognition is in line with the requirement of MFRS 141 Agriculture.

According to BAHVEST 2021 annual report, broodstocks are measured at cost less accumulated amortisation and impairment losses as the quoted market prices are not available and for which alternative estimates of fair value measurements are determined to be clearly unreliable. Once the fair value of such a biological asset becomes reliably measurable, the entity shall measure it at its fair value less costs to sell.

Broodstocks are recognised as non-current biological assets whereas fishery livestock are recognised as current biological assets. Any changes in fair value of broodstocks and fishery livestock will be recognised as profit or loss in the statement of profit or loss of the company (XL 2021, 2022). This is in line with the requirement of MFRS 141 Agriculture.

About the changes in fair value of livestock, they are recognised as income in the statement of profit or loss and other comprehensive income of the two companies (BAHVEST, 2021; XL, 2021 & 2022).

Based on the above findings, it can be concluded that both companies are following the requirements of MFRS 141 in recognition of biological assets.

Measurement of biological assets and aquaculture

The third objective is to examine the accounting practice of aquaculture companies in measurement of biological assets. MFRS 141 requires all biological assets to be measured at fair value less cost to sell except the fair value cannot be measured reliably.

According to XL Holding Bhd's annual report (2021) the fair value of broodstocks are determined by using discounted cash flow. In determining the fair value, management uses the present value of expected net cash flows discounted at an appropriate rate based on the expected number of day-old fish produced and its projected weighted average selling price, together with feed costs, consumption rates and other estimated farming cost that will be incurred throughout the remaining life of the broodstocks.

According to BAHVEST (2021), broodstocks are measured at cost less accumulated amortisation and impairment losses as the quoted market prices are not available and for which alternative estimates of fair value measurements are determined to be clearly unreliable. Once the fair value of such a biological asset becomes reliably measurable, an entity shall measure it at its fair value less costs to sell.

All costs incurred on immature broodstocks which are accumulated on a project basis are capitalised until such time when the broodstocks commence breeding. Costs incurred on immature broodstocks consist of the acquisition cost of the mother fish/crab, cost of feeds and medication, direct labour cost and an appropriate proportion of farm operating overheads. Maintenance costs of broodstocks after commencement of breeding are recognised in profit or loss.

Broodstocks are fishes/crabs held for reproduction purpose, not intended for sale and classified as non-current assets. The costs of broodstocks are amortised over the expected reproductive lifespan of the respective fish/crab, as follows:

Fishes 8 to 10 years depending on species; Crab 2 years.

Upon disposal of the broodstocks, the difference between the net disposal proceeds and the net carrying amount is recognised in profit or loss.

The fair value less costs to sell of fishery livestock are determined by the management using market price of fishes with similar length, species and genetic merit with adjustments, less expected mortality of fishery livestock and costs to sell. As such, the measurement of fair value contains significant estimates and inherently judgement (XL 2021; 2022).

The valuation technique for broodstock is based on discounted cash flow as follows:

For broodstock, XL utilised the discounted cash method. The valuation method considers the projected quantity and price of day-old fish to be produced over the life of the broodstocks, expected growing cost and discount rate.

For fishery livestock, XL used the market approach. The valuation method considers the market prices of similar length, species, genetic merit with adjustment, less expected mortality and costs to sell.

According to BAHVEST (2021), fishery livestock are measured at fair value less costs to sell, based on market prices of livestock of similar age, species, genetic merit with adjustments, where necessary, to reflect the differences. Market prices are obtained from observable market prices (where available), contracted prices or estimated future prices. The costs to sell include the incremental selling costs, including fees and commission paid to dealers and estimated costs of transport to market. Changes in fair value of livestock are recognised in profit or loss. In measuring the fair value of fishery livestock, various management estimates and judgements are required. Estimates and judgements in determining the fair value of fishery livestock relate to the market prices, average weight, tails of fishes, quality of the fishery livestock and mortality rates.

Fish fry and crab is measured at cost less impairment losses as the fair value cannot be measured reliably and there is little biological transformation. The cost of fish fry is measured based on monthly weighted average cost formula and includes cost of purchase plus transportation charges (if any), feed and medication, direct labour cost and an appropriate proportion of farm operating overheads accumulated on a project basis.

In conclusion, the two companies are measuring their biological assets in line with the requirement of MFRS 141.

Issues in measurement of fair value

While a physical sighting exercise on the quantity of the broodstocks and the fishery livestock which are of various sizes or small size and in large quantities, there is limitation to assess the accuracy of the quantity of fishes in each fishpond or fish tank. It is not possible to perform an actual count of the fish within the fishpond or fish tank as the only way to successfully perform this is to individually transfer the fish from one fishpond or fish tank to another, the act of which increases the mortality and therefore is not performed. Instead, the quantity is calculated by experienced personnel relying on the controls over the inputs and mortality (XL 2021; 2022).

For BAHVEST, there is an issue of unreliable measurement of broodstock, fishery livestock and crabs in the market. Therefore, cost model is used until reliable measurement for fair values can be obtained.

Presentation and disclosure of biological assets

The fourth objective is to examine the accounting practice of aquaculture companies with regards to presentation and disclosure of biological assets.

Biological assets are presented in the statement of financial position as non-current assets and current assets. Non-current assets represent fish broodstock whereas current assets represent fishery livestock. Trading fish are classified as inventory according to MFRS 102 requirements. Detail about trading fish is presented in the notes to financial statements (XL, 2021; 2022).

Current and non-current biological assets are presented as one line item in the statement of financial position of BAHVEST in 2021 annual report. However, the details are disclosed separately in notes on biological assets (BAHVEST, 2021).

STATEMENTS OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 JANUARY 2021

	Note	2021 RM	Group 2020 RM
REVENUE	17	27,835,872	14,073,395
ADD: OTHER INCOME		389,697	350,984
LESS: CHANGES IN BIOLOGICAL ASSETS		511,631	(66,518)
LESS: CHANGES IN INVENTORIES		280,842	284,885

Biological assets of XL were shown in the statement of profit or loss as changes in biological assets in 2021 annual report but aggregated as revenue in 2022 annual report. In the notes to the financial statement of XL, broodstock (non-current assets) and fishery livestock (current assets) are disclosed separately.

According to XL (2021, 2022), to find the carrying amount of the broodstock, the opening balance of broodstock will be added with the purchase of new broodstock subtracted with mortality and added with changes in fair value less cost to sell. Whereas for fishery livestock, the carrying value at the end of the year is arrived by adding the opening balance with new purchase, added with change in fair value and deduct the amount of mortality and decrease due to sales.

Based on the above findings, it can be concluded that biological assets of the two companies are presented and disclosed according to MFRS 141 biological assets and MFRS 1 presentation of financial statement.

LIMITATIONS OF STUDY

There are some drawbacks to this study. To begin with, this study only looked at the frequency of mandatory disclosure reported by aquaculture producer businesses, which was based on secondary data, and it was unable to explain in detail why some of the mandatory items needed by the standard were not disclosed (MFRS141, Biological Assets).

Second, rather than employing interviewing methodologies, this study focused solely on the material available in the annual reports of aquaculture businesses on Bursa Malaysia. This is because some of the material in the annual reports is highly sensitive and limited. Due to logistical issues, it is hard to interview all the aquaculture businesses on Bursa Malaysia.

Finally, the sample from these companies is limited to one sort of activity, namely aquaculture, and thus does not represent the whole range of other activities.

CONCLUSION AND RECOMMENDATIONS

The accounting methods of two (2) listed aquaculture-based companies on Bursa Malaysia were examined in this study. MFRS 141 requires these aquaculture businesses to disclose their biological asset accounting in their annual reports, including definition, recognition, measurement, accounting treatment and presentation, and disclosure of durian in annual reports.

The main findings demonstrated that the two companies' accounting practises for biological asset-aquaculture definition, recognition, measurement, presentation, and disclosure are in line with the standards of MFRS 141 Agriculture. The findings of this study will contribute to the literature on the importance of accounting standards disclosures by publicly traded companies, particularly aquaculture businesses in Malaysia, according to the MFRS 141, Biological Assets. These

aquaculture businesses should follow the requirements of standards in disclosing all items in annual reports, and preparers should be informed of any changes in accounting rules while generating high-quality annual reports.

The findings of this study will help future researchers, particularly in the aquaculture business, conduct longer-term research to produce more accurate results, and use research samples that are not limited to aquaculture business but also include other agriculture activities such as plantation and forestry. This is because under the Malaysian National Key Economic Area, the aquaculture sector is considered as one of the most important generators of economic activity (NKEA) that should be focused by the government, especially in financial reporting of aquaculture activities in Malaysia.

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