

Fostering a Humane and Green Future: Pathways to Inclusive Societies and Sustainable Development



Establishing Management Accounting System for an Agricultural Enterprise

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Abstract: This action research established a management accounting system for a small family business in the Philippines engaged in agriculture. Through co-inquiry, root-cause analysis, and collaborations, we identified issues caused by the absence of a structured management accounting system. We used the farm business management accounting model to design a system that generates reports in a timely and cost-efficient manner to support decision-making composed of key stages of data collection, processing, reporting, and analysis. Reports were enriched based on the attributes of quality reports as provided by the conceptual framework for financial reporting. This intervention guided management in their decision-making, and future strategies for the farm, and meet stakeholder information needs.

Key Words: Action research; family business; agricultural enterprise; management accounting system; farm business accounting model

1. INTRODUCTION

1.1 Purpose and rationale

The majority of small and medium-sized companies (SMEs) are family-owned which extends to different sectors (Alves & Gama, 2020, p. 164). Smaller family businesses are seen to have a flow of work, communication, and information that are informal and are usually not used in going through structured systems, formal policies, and procedures. Conversations regarding this topic are usually opened only when the owners are already facing significant problems and performance dissatisfaction (Carmon, 2013, p. 90; Davis, 2019).

The subject of this insider action research is a family business engaged in harvesting and selling rice and corn (Company or Farm). It has been mainly operated by my late grandparents or the parents of the current heirs or owners of the Farm (Owners). The operations have been completely transferred to the current Owners starting the 3rd quarter of 2021, with operations primarily spearheaded by one of the siblings (the Head).

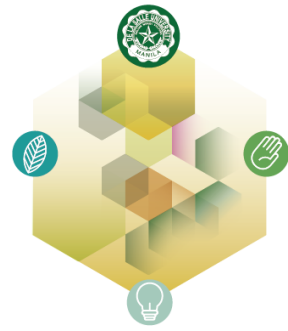
After informal discussions with the Head, the Owners want to improve the Farm's cash position by

understanding the source of continuous cash burn, analyzing expenditures, and identifying insufficient revenues. However, this action requires sufficient summarized information to support decision-making, which depends on a system that can process all inflows and outflows and guide their decisions based on facts.

1.2 Context

I observed that the Company's operations, including key personnel, were accustomed to informal ways of doing business, such as verbal instructions, which resulted in unrecorded assets, revenues, and expenses. This made it challenging for the Head and co-owners to comprehend the decline in cash and profitability, prompting them to appoint me as the accountant. Before conducting action research, generating relevant reports to address the Owners' concerns proved difficult. They requested various financial reports on an ad-hoc basis, and there was no set frequency for providing certain internal financial information.

The focus of the action research was to pioneer and establish a management accounting system for the Farm designed to generate relevant reports for management in a timely and cost-efficient manner.



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Management accounting system consists of gathering financial information and data used for internal purposes. Management reports aim to aid decision-making and provide avenues to identify key issues, strategies, and allocation of resources (Ameen et al., 2018). Accordingly, the system is expected to generate relevant reports to increase the visibility of the Farm operations and support the data-backed decision-making of its owners.

2. METHODOLOGY

This qualitative action research study utilized the phases of the action research cycle by Coghlan (2019). It incorporated three (3) key methods of data collection which are the first, second, and third-person inquiry (Coghlan, 2019, p. 27). First-person inquiry used to obtain data included the application of realistic ORJI, the ladder of inference, and the left-hand column. Second-person inquiry tools were used to document conversations with collaborations such as active inquiry, four parts of speech, hypothesis testing, force field analysis, systems thinking, and root cause analysis, particularly 5 whys analysis (Coghlan, 2019).

2.2. Farm Business Management Accounting Model

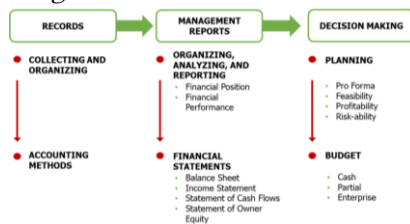


Fig 1. Farm Business Management Accounting Model
Note. This figure represents the management accounting flow of farm businesses. Adapted from "Developing a farm financial model" by K. Wantoch, 2021, *Farm Pulse: Financial Management Series*, pp. 1-14. Copyright 2021 by the University of Wisconsin-Madison

Fig 1's farm financial model guided the planning and implementation of the management accounting system. It shows the process from the collection of production and financial data, which are processed and organized to track farm records and create management reports, including the financial position and performance. Finally, budgeted reports are compared to actual financial data. (Katie Wantoch, 2021, p. 3).

2.2.2 Attributes of Quality Financial Reporting

A quality financial report satisfying the information needs of its stakeholders is characterized to meet its primary objective to provide relevant

information for the decision-making of the users of the report (Dumisani Rumbidzai Muzira, 2019).

Fundamental qualitative characteristics include relevance and faithful representation while enhancing qualitative characteristics include comparability, verifiability, timeliness, and understandability (Dumisani Rumbidzai Muzira, 2019; International Accounting Standards Board, 2018, p. A28). These attributes were used to structure how the financial reports should be to ensure their use can be maximized by the Owners.

2.2.3 Kurt Lewin's Change Model

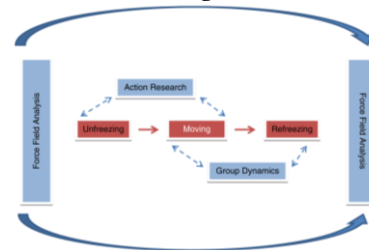


Fig 2. Lewin's Change Model with Force Field Analysis

Note. This figure represents a derivation of Lewin's change model with a force field analysis. From "Planned organisational change management: Forward to the past? An exploratory literature review", by D. Rosenbaum et. al, 2018, *Journal of Organizational Change Management*, p. 289. Copyright 2018 by Emerald Publishing Limited

In addition to the three (3) stage change process by Lewin, a study by Rosenbaum et al (2018) discussed that the change model framework includes iterative methods through action research designed to evaluate action, assess initial learning outcomes, lay the foundation of further planning, and remodel plans in a fluid, non-static process as presented in Fig 2 (Rosenbaum et al., 2018, p. 291). This framework was used in the application of the change introduced to the Farm in this action research.

3. RESULTS AND DISCUSSION

3.1 Story and outcomes

3.1.1 Need for the management accounting system

Based on the conversations with the Head and observations in the Farm serving as the accountant, it was noted that the Farmers and the Owners are very used to the traditional ways of working, which relied on verbal instructions and manual recording. As a result, there is significant existence of manual input required for its records. Further, I found difficulties in spending time on the Farm due to my full-time work and ongoing studies. At the start of the action research, I did not have a template yet to process the

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data into a report that the Owners can use. Overall, this affected the process of churning out relevant reports for the Owners.

The Owners wanted to monitor the operations more closely and make decisions based on the financials, of which they have minimal visibility currently. Accordingly, this placed importance on establishing a structured management accounting system for the Farm.

3.1.2 *Planning the management accounting system*

According to Yekimov et. al (2021), there are five (5) key guidelines in a management accounting system that can be considered by agricultural enterprises: 1) The system must include basic indicators of efficiency adapted to enterprise activity; 2) It should be adapted based on enterprise activity; 3) Farms should adapt chart of accounts depending on needs and business operations of the enterprise; 4) Management reports should have specific reports and rules for collecting information depending on the enterprise; and 5) Reports and indicators of efficiency must meet requirements of management who will ultimately use the reports for decision making.

The guidelines served as a checklist for planning the implementation. Along with this, Fig 1 was used to build on the four (4) key stages of the system. This was modified as shown in Fig 3 in the context of a small family business and the Farm's needs.

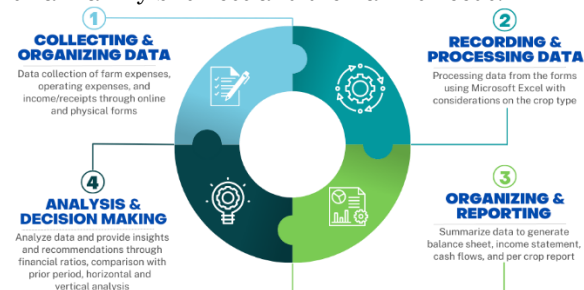


Fig 3. Modified Farm Business Management Accounting Model

Based on the implementation of the action research for two (2) cycles, the following key themes and outcomes were noted in the overall implementation and for each of the key stages.

3.1.3 *Overall implementation*

A. *Simple system was adapted based on entity operations*

The term 'system' was seen to be too complicated by the collaborators. This showed how critical it is to

explain the purpose of the management accounting system, why is it important, and how it will work. It was also essential to show that adapting the system does not require complex operations similar to corporations. This can be adjusted based on the Farm context and size of operations as long as it covers the guidelines and four (4) key stages.

B. *System was established at minimal to no cost*

The Head required that the system should be implemented at minimal to no cost. Accordingly, various free tools such as Microsoft Excel, Google Sheets, Freshbooks, Quickbooks, and Zoho Books were assessed as data computing tools. Google Forms together with Zoho Forms, JotForm, Microsoft Forms, and Typeform was checked for the online collection of data. Microsoft Excel and Google Forms were ultimately used based on the key criteria defined such as level of customizability and ease of use.

C. *Introduction of gradual and phased changes helped smoother implementation*

Traditional ways of working for the Farm proved to be the key force restraining change for the Farm. Based on conversations with the collaborators and actual implementation, it is vital to introduce changes and modifications gradually, preferably focusing on only one (1) key change at a time and making appropriate adjustments based on results. Minor phased changes for the Farm were appreciated by the Owners to consider the stakeholders affected by the implementation.

D. *Collaborative and feedback process was vital in the creation of the system*

The implementation of the system through action research required significant collaboration and feedback. The collaborators appreciated the opportunity to provide their input and feedback which made them feel involved in the process. This highlighted the importance of a collaborative process in which the voice of the Farmers and the Owners were heard in the creation of the system.

3.1.4 *Collecting and organizing data*

A. *Users and their comfortability with technology were crucial in data collection*

Based on our discussions, careful consideration was placed with regard to the potential stakeholders providing key sources of data, including what medium will be used to collect data. This included consideration of available technology and the level of

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comfortability of the potential stakeholders with using these technologies.

Based on the actual experience and suggestion of the Head, we used physical forms for the Farmers due to limitations in technology available to their phones. Other data were agreed to be collected through online forms that are familiar to the collaborators.

B. Data collection process was targeted to be easy and intuitive for the Farmers

It was identified that in this stage, the Farmers as they are the key affected stakeholders and primary source of information for the Farm's operations.

Thus, the physical forms implemented for the Farmers were designed to be easy to understand and fill up, requiring minimal inputs, not time-consuming, aligned with actual operations, and using the Tagalog language as possible. Emphasis was also placed on ensuring the process does not take significant time away from their main tasks on the Farm.

3.1.5 Recording and processing data

A. KPIs and report outputs were essential to agree with the Owners

One of the key problems encountered was the different data points and information requested by the Owners which made it difficult to generate reports in a timely manner. Indicators of efficiency and specific reports must be in line with the requirements of the decision-makers or management and modified to the activities of the enterprise (Yekimov et al., 2021, pp. 2-3). Accordingly, one of the key considerations was to obtain inputs from the Owners regarding the data points they want to monitor including key performance indicators (KPIs) and frequency of reporting preferred.

The key defined outputs based on discussions with the collaborators included entity-specific line items such as revenue from the sale of crops, and cash advances from Farmers. Relevant KPIs for farms include but are not limited to gross margin, net farm income ratio, and asset turnover. Further, we agreed to maintain a per-crop profitability report to help understand the performance of each crop.

3.1.6 Organizing and reporting

A. Visibility of Farm financials was critical for strategy and operational decision making

After processing data and generating reports, the initial balance sheet and income statement was sent to the Owners. As a result, the need of the Owners to have visibility on the operations and understand the significant decline in the cash balance was addressed.

We were able to have transparency and visibility on the profitability per crop and the overall profitability of the Farm. It was clear what expenses we were spending significantly on and the revenues generated by the Farm. The assets and outstanding liabilities of the Farm also became apparent after the implementation.

This helped not only the Head but also the co-owners to have visibility on the Farm operations. Accordingly, this helped them understand what areas to optimize. Further, this helped us to start a test and learn a strategy to test other crops in our usual set of crop cycles. Accordingly, the reports also served as information to support decision-making for the Farm.

3.1.7 Analysis and decision making

A. Financial report quality and meeting stakeholder needs were crucial for report understanding and usability

In the 2nd cycle of action research, I recognized that I failed to consider the process and reports from the perspective of non-accountants, stakeholders unfamiliar with Farm operations, and users making decisions in the initial implementation of the system. This led to potential misunderstandings of account nature. While the income statement and balance sheet were able to provide guidance to the Owners, we noted that we have to make sure that the users of the report can understand and use them. Accordingly, meeting stakeholder information needs is crucial, regardless of a business's size and complexity, to ensure the management accounting system achieves its overall objectives.

Thus, the reports were updated following the attributes of quality financial reporting. Comparison between different periods, footnotes to explain the nature of line items, key highlights/lowlights, and potential key recommendations were added to further guide users on the figures presented in the report. This helped to improve the quality of the financial reports and make it more value-adding for the Owners.

3.1.8 Key next steps

Overall, the Head and I agreed to continue this cycle of iterations. We agreed to keep a prioritization table which will allow us to continue to make changes in the established management accounting system with a minor increment of changes leading up to accumulated improvement in the system currently established.

Further, we noted that the system can be used for financial accounting purposes as one of the outputs of

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the system is an income statement and balance sheet following accounting standards and a double entry system.

3.2 Self-reflection and changes

The two (2) cycles of the action research changed me, my collaborators, and the organization.

My key self-reflection was on recognizing and testing an assumption, and how I treated some assumptions as facts which greatly influenced my actions. Acknowledging this helped me understand my behavior and take corrective action. Additionally, I learned the importance of asking questions to test assumptions which changed my approach to asking or clarifying my questions rather than assuming.

The collaborators became more open in providing feedback and inputs as they became more involved and invested in the system implemented. Further, they saw the importance of the management accounting system and became more aware of what is happening in the Farm.

For the organization, the application of the management accounting system helped to provide structure from data collection to the provision of reports and outputs useful to management.

3.3 Learnings and extrapolation to broader use

The key highlights of the changes and learnings from the implementation of the management accounting system and potential application to other agricultural enterprises and MSMEs are summarized as follows:

3.2.1. Management accounting systems can be simple and implemented at a minimal cost

Management accounting systems including financial accounting systems can be implemented by MSMEs and farms simply and at zero to minimal costs. One (1) system can be used to accommodate both requirements for financial accounting purposes and internal reports. For family businesses transitioning from traditional ways of working, it is critical to keep the process simple, with minor changes introduced to ensure users are able to adapt.

Further, various online free tools are available for the system. Depending on the size and complexity of operations, farmers and/or MSMEs can also use the “shoebox” method as they deem fit as long as they are able to process data as accurately and timely as possible, following the four (4) key stages of the system.

3.2.2. Collaborative process with ultimate users is critical

Collaborative and feedback processes with the ultimate users of the system such as farmers and owners are critical to ensure they are considered in the creation of the system and not only once it is deployed.

3.2.3. Farmers are the core of data collection

One of the key reminders for farms is that the data collection process and system must be kept simple as possible as complicated methods may drive farmers away from doing record keeping or doing it in a timely manner. Further, significant complications may also cause more mistakes (Katie Wantoch, 2021, p. 3).

3.2.4. Design of recording and processing data requires defined inputs and outputs

The guidelines of the management accounting system discuss that indicators of efficiency and specific reports that agricultural enterprises adopt must be in line with the requirements of the decision makers or management and modified to the financial and economic activities of the enterprise (Yekimov et al., 2021, pp. 2-3). Thus, effectively designing how to record and process data depends on the understanding of the expected inputs and outputs of the process. This also showcased the importance of agreeing and aligning the expected outputs with the ultimate users of the report or the Owners.

3.2.5. Management reports should meet stakeholder information needs regardless of the entity's size

Despite the size of an entity's operations, financial reports must be of high quality so that these reports can be of use to the stakeholder. Establishing the management accounting system and creating the balance sheet and income statement is not as value-adding if the output is not usable by the decision-makers. This places significant importance on meeting stakeholder information needs and following fundamental and enhancing qualitative financial reporting characteristics regardless of the entity's size. This can be met by listing down potential stakeholders including their main need or use of the report which is helpful to consider how to structure the reports that meet their needs. Specific stakeholder needs for small businesses include relevance, comparability, and transparency (Mošnja -Škare & Galant, 2013, pp. 344-345)

Further, notes or disclosures are an integral part of financial reports as it contains additional and

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complementary information related to the items presented in the balance sheet and income statement, designed to provide a proper understanding of the reports. Accordingly, the absence of this causes the inability to satisfy the information needs of the stakeholders. (Mošnja -Škare & Galant, 2013, pp. 344-345)

3.2.6. Other practices

Based on our context and implementation, we noted that it is essential to monitor or track expenses and collections on a per-crop basis. Further, it is important to categorize between costs directly related to the sale and growth of the crops as compared to the general operating expenses of a farm business. Other helpful information that should be taken note of is the number of cavans sold and price per cavan.

4. CONCLUSIONS

A management accounting system is crucial for farms as it provides relevant information for decision-making. Reports generated from the system offer visibility and understanding of past actions through a financial lens, providing concrete steps for farm operations. This can be implemented with minimal to no cost using a modified farm business management accounting model with key stages of data collection, recording and processing, reporting, and analysis. The "shoebox" method or pen and paper can be used as alternative options if access to tools like Excel and Google Sheets is not available, as long as reports meet stakeholder information needs and address attributes of quality financial reporting.

5. ACKNOWLEDGMENTS

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