

Farming practices and experiences of Meranaw *sakurab* (*Allium fistulosum*) farmers

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Abstract

This paper used a case study research design aimed at investigating the farming practices and experiences of Meranaw *sakurab* farmers in Lanao del Sur. A mixed method of quantitative and qualitative approaches was used in the investigation in which 10 Meranaw *sakurab* farmers participated. They were purposively selected using a referral or snowball method. A survey questionnaire and an interview question guide were used as the instruments in collecting quantitative and qualitative data, respectively. Quantitative data was analyzed using descriptive statistics, since this case study was descriptive in nature, while qualitative data was thematically analyzed. Quantitative findings revealed that 60% of the Meranaw *sakurab* farmers were between 31-40 years old, male (100%), with an elementary level of education (100%), a monthly income of approximately 5,000.00 (90%), land owners (100%) with less than a one-hectare *sakurab* farm (90%), and with more than 15 years' experience in *sakurab* farming. Results also showed that their farming practices conformed with the standard procedures in farming. The participants used hybrid farming strategies: an amalgamation of conventional, organic and indigenous farming system. Qualitative findings revealed four themes, namely (a) legacy; (b) change and support; (c) technology and technological skills, and (d) struggling to succeed as descriptions of their farming practices and experiences. Generally, the participants believed that farming is a way of life with a purpose and according to principles, while agricultural skills and knowledge are important to become a successful farmer.

Keywords: farming practices, farmers, lived experiences, *sakurab*

Introduction

Farming is a way of life with a purpose and principles, while agricultural skills and knowledge are essential to become a successful farmer. This study was inspired by the farmers' beliefs that their farms are a good place to live, a good place to raise a family, and a good way to be a part of creating a community. Farming means a great deal to farmers, not only as a means of making money but farming makes them happy. However, small-scale farmers such as the Meranaw *sakurab* farmers usually go unnoticed, if not neglected. Many small-scale farmers in remote and secluded areas are disadvantaged in terms of agricultural development and they struggle to eke out an existence. This study revealed the farming practices and experiences of the selected Meranaw *sakurab* farmers to share strategies in the body of agricultural knowledge.

Even though farmers have common practices and management, each farmer has practices that are unique to him; these will also vary according to the crops that they farm. Farming practices refer to any practices that could impact the quantity and quality of crops. A farming practice can be considered as a good one when it is compatible with agronomic and weather conditions of the farm area, when crop productivity is progressive and profitable, and when it produces a high yield or production capacity (Taylor, 2021). Farming practices vary from crop to crop, region to region, and tribe to tribe. It is from this perspective that this paper explores the farming practices and life experiences of Meranao *sakurab* farmers. Meranao has unique cultures and practices; knowledge of their farming practices and lived experiences, specifically in terms of their *sakurab* farming, will be helpful to other farmers and provide insights and motivation to explore *sakurab* farming as well. *Sakurab* is an aromatic and non-seasonal herb that can be grown all year round. This herb is the raw material for a delicious appetizer called *palapa* which is a unique cuisine among Meranaos. Since Lanao del Sur province has vast agricultural land areas with favorable climatic conditions; farmers can easily grow *sakurab* as the demand increases. There is also a clear desire on the part of *sakurab* farmers to work with a wholesaler or distributor to a wider market.

The technological revolution has also contributed to the modernization of farming methods and practices. However, indigenous people and other cultural minorities tend to retain their traditional methods of farming, particularly the small-scale farmers located in remote areas. There are various factors to be considered why small-scale farmers are left behind with regard to agricultural innovation and mechanization. Common factors include lack of knowledge and technical skills, limited finances, and lack of government support. A research study conducted by Pin and Mihara (2013) found that the farmers believed that chemical fertilizers and pesticides are necessary in farming to increase crop yield; however, these add to their farming expenses. As such, farmers tend to shift their farming practices to a more sustainable one; this will imply providing agricultural education to the farmers such as technical training, workshops, and means of other techno-transfer that are necessary for them to gain knowledge of promoting sustainable farming systems. On the other hand, Sereño (2017) conducted a survey on farm practices of small-scale vegetable farmers in the Southern Philippines. His findings revealed that the impact of farmer field schools on integrated crop management was an increase in vegetable farm income. However, in terms of farm labor, all farming activities are shared between men and women, with males carrying out more the intensive farming activities. In this case, he suggested that agricultural pieces of training should be given to both men and women.

In line with the statements and research findings about farming practices mentioned above, the objective of this paper was to determine the farming practices and experiences of Meranao *sakurab* farmers and to establish baseline information about their farming practices and experiences. The scope of this investigation was limited only to the following aspects, namely (a) the demographic profile of the farmers which includes their age, gender, educational attainment, estimated monthly income, land status of their farm, and their farm size; (b) the farming practices of the farmers which include land preparation, planting methods, farm management, and their harvesting, storing and marketing strategies; and (c) their experiences in farming *sakurab*. Knowing their farming practices and experiences could benefit other farmers, as well as enabling the government sector to take action in addressing the pressing situation and technical skills needed by the farmers.

Literature Review

Farming practices may vary from farmer to farmer and from crop to crop. Farming practices can be categorized as good or poor, depending on their impact on the environment, economy, and society. Sustainable farming generally recognizes agronomic and weather conditions in the area to ensure profitable farm production (Taylor, 2021). Farming practices also include proper crop management. Crop management also varies from crop to crop since crops differ in terms of

growth and development, soil maintenance, and nutrients. Crop management can also be influenced by the culture and techno-skills of farmers. In other words, crop management includes all activities of crop production that are controlled by the farmers. To ensure good crop management, a two-stage process must be adopted, namely the production of an efficient leaf canopy by flowering time, and the efficient conversion of photosynthate into oil and protein during seed development (Mendhan & Robertson, 2016). Crop management practices include proper irrigation, tillage, and plant nutrition. It is a set of agricultural practices performed among farmers to improve the growth and yield of their crops. However, the timing and sequence of farming practices depend upon several factors that include seasons and weather conditions, climatic conditions, soil nutrients, types of crops, the purpose of the crops, planting methods, and the plant age (Walia, 2021).

The Philippines is generally rich in agricultural land where for many generations, agriculture has been the backbone of the Filipino people, particularly in Mindanao, and it plays an important role in the Philippine economy. However, there are growing concerns about farmers' sustainability due to the degradation of its ecological balance. This is usually contributed to by the intensive farming system without consideration of good farming practices. According to Tripathi and Tauseef (2018), to ensure sustainable farming, the development of alternative and environmentally friendly agricultural practices such as natural farming methods and zero budget natural farming (ZBNF) is necessary to be practiced in farming. This method will most likely address the current ongoing agricultural problems that directly or indirectly threaten the sustainability of their agriculture. Likewise, it is necessary for farmers to seriously consider farming practices that are suited and adapted to the area, and which have been successfully carried out among them. Laishram et al. (2021) emphasized that cropping patterns and natural farming approaches are two of the key principles to ensure sustainable farming.

Zapico et al. (2015) pointed out that cultural and biological diversity are intricately linked. Indigenous knowledge systems in farming on a scientific basis must be recognized and instituted. Meranao *sakurab* farmers consider their *sakurab* crops as their cash crops. They plant *sakurab* to sustain their daily needs and for the future of their children as their economic support for the schooling of their children. A research study conducted by Rubbara et al. (2020) on the impacts of cash crop production on household food security for smallholder farmers in Shamva, Zimbabawi revealed that cash crop production has a positive impact on the income of the farmers and influences household food security. Virk et al. (2020) mentioned that agricultural practices become more advanced with the passage of time. Owing to technological revolution and advancement, agricultural practices are now modernized. However, using these advanced agricultural technologies requires smart farming for better utilization and production. However, Meranao farmers usually lag behind in terms of the latest technology and approaches in farming: they tend to be hesitant about using modern agricultural techniques owing to their lack of knowledge and skills. As such, their farming practices are usually the conventional method with which they are familiar.

Considering that farming practices can vary across different cultures and crop varieties, it is necessary to investigate the farming practices and live experiences of the Meranao farmers who plant *sakurab* crops. The modernization and mechanization of agricultural practices are not usually applied among Meranao farmers in the Municipality of Balindong, Lanao del Sur, particularly in planting *sakurab* crops; this may possibly be owing to their limited or unavailable resources and limited technological skills. Madayag and Estanislao (2021) recommended that the Philippine government, particularly the agricultural sector, should promote a new breed of farmers who are technologically skilled in the latest available technology for agriculture. Moreover, the younger generations should be trained to be future agriculturists and farmers who are technologically

equipped with the use of modern agricultural technologies with agripreneurial and agri-scientific mindsets.

Methods

Participants

This study was comprised of 10 Meranao *sakurab* farmers who were purposively selected by means of a snowball technique and the principle of saturation. The study was conducted in a *barangay* in Balindong Lanao del Sur, Philippines where *sakurab* forms the main crop production. They are usually known as bulk suppliers of *sakurab* in the City of Marawi and Iligan. The 10 participants were enough to represent the *sakurab* farmers, considering the scope of the study was very specific, taking only one crop into account. Qualitative studies can reach saturation at relatively small sample sizes. A study conducted by Hennink and Kaiser (2022) found that saturation was reached between nine and 17 interviews or four to eight focus group discussions. Based on the principle of saturation, once the collected data has been repeatedly the same, further data collection and analysis are unnecessary (Saunders et al., 2018). All of the 10 participants voluntarily participated in the survey and the interview. Proper consent and entry protocols were observed with the help of the gatekeepers for the researcher to have greater access and proximity to their farms.

Design

This study was a short-term research study using a case study research design to determine the farming practices and experiences of the 10 Meranao *sakurab* farmers. A case study design is useful in investigating a single or group of individuals to gain an in-depth understanding of their experiences, behavior or outcomes. A case study does not require large sample sizes, but mainly focuses on an in-depth consideration of specific circumstances, events or phenomena bounded by a setting or context. A key defining attribute of descriptive research design is that it only describes the situation, and does not explore potential relationships among different variables or the causes that may underlie those relationships (Jensen, 2023). As such, this study employed a case study design since the focus of the study was on a single group, namely the *sakurab* farmers' farming practices and experiences. The analytic approach of this study was a mixed method of both quantitative and qualitative approaches. A mixed method offers a better opportunity to collect, analyze, and interpret quantitative and qualitative data interactively (Creswell & Plano Clark, 2011). This study employed a pragmatic approach through the complementarity of the findings from the survey and interviews to enable an in-depth understanding of the subject matter as well as enabling the data collection within a short period (Palinkas et. Al., 2015; Warfa, 2016).

Materials

A survey questionnaire and interview guide questions were the data collection tools to chronicle the Meranao *sakurab* farming practices and experiences. The survey questionnaire was in a checklist form and was used to collect information about their demographic profile and farming practices. Interview guide questions comprised open-ended questions that were used to determine their farming practices and lived experiences in farming *sakurab*. The qualitative information gathered from the interviews was used to support the quantitative findings of the study.

Procedure

The collection of data was executed by the researcher along with the research assistant and gatekeepers. Actual farm visitation was conducted for documentation and observation. Likewise, all participants answered the survey questionnaire for the quantitative data collection, and voluntarily participated in the interview. Quantitative and qualitative data were collected through the survey questionnaire and interview, respectively. Data collection was administered either at the home or farm of the participants at their convenience. Prior to the interviews, the participants were oriented about the study and their informed consent obtained. Confidentiality of the disclosed information was strictly observed. The gathered data was analyzed using a quantitative-

qualitative analysis. Quantitative data from the survey questionnaire was statistically analyzed using SPSS version 16.0 to generate the descriptive analysis. There were no correlations or nonparametric analysis since the quantitative aspect of the study was purely descriptive, the key defining attribute of descriptive being that it merely describes the situation, and does not explore potential relationships among different variables or the causes that may underlie those relationships (Jensen, 2023). On the other hand, qualitative data from interview was transcribed, summarized, and categorized according to context and presented in a thematic way.

Results

Socio-demographic profile of the Meranao sakurab farmers

Table 1 shows the frequency and percentage distribution of the farmers' demographic profile in terms of their age, gender, estimated monthly income, educational attainment, land status, and farm size together with their respective means. As shown in Table 1, the ages of the farmers vary; however, most of them (60%) are in the age bracket of 31-40. In terms of their gender, 100% are male which is common among Filipinos: farm workers are dominated by male farmers, while their highest educational attainment is at the elementary level only. Malkhanti's (2020) research findings showed that farmers' educational level positively and significantly affects their attitudes in farming, particularly in terms of organic farming. It is also noted that many of them (50%) have a monthly income of below 5,000; however, they owned the land they farm. Nevertheless, the farm size for their *sakurab* farming forms only a portion of their owned land, with 50% of them having a 60x20m² *sakurab* farm size, while only one (10%) has a 1.5 hectare *sakurab* farm size.

Table 1: Statistical Results of the Demographic Profile of the Farmers

Profile	f	%	mean
1) Age			
20-30	1	10	0.1
31-40	6	60	0.6
41-50	1	10	0.1
51 -60	2	20	0.2
2) Gender			
Male	10	100	1
Female	0	0	0
3) Educational attainment			
Elementary	10	100	1
4) Estimated monthly income			
Below 5,000	5	50	0.5
5,000 -10, 000	4	40	0.4
10,900 – 15,000	1	10	0.1
Above 15,000	0	0	0
5) Land status			
Land owner	10	100	1
6) Farm size			
240 sqm	1	10	0.1
40x40 sqm	1	10	0.1
80x40sqm	1	10	0.1
60x20sqm	5	50	0.5
60x30sqm	1	10	0.1
1.5 ha	1	10	0.1

Number of Years of Farming Sakurab

In terms of the number of years of being a *sakurab* farmer, Figure 1 shows that their engagement with *sakruab* farming varies regarding the number of years. Out of the ten *sakurab* farmers who participated in this survey, one of them has been farming for 36 years while the lowest number of years is 12. In terms of the number of years that they have been engaged in farming, it can be said that they are sufficiently experienced in the field of farming *sakurab*, having experimented with various farming strategies to manage their farm and improve their *sakurab* production. It is also important to note that the ten *sakurab* farmers are landowners of their farm; this could be the source of their status and self-sufficiency to continue farming *sakruab*. Autonomy and self-sufficiency empowered the farmers to continue farming (Touzeau, 2019).

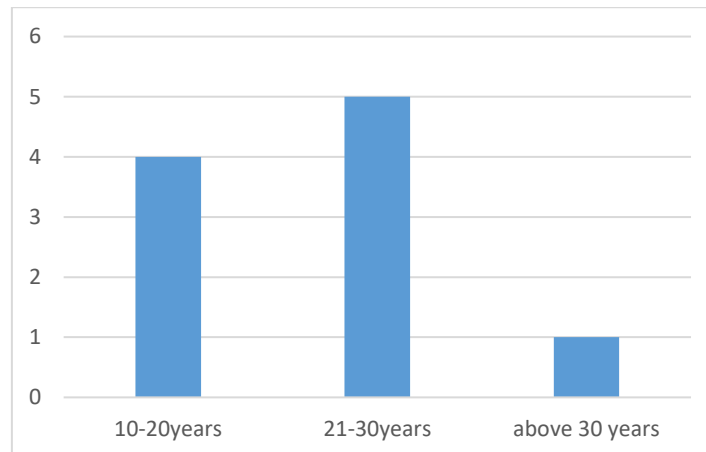


Figure 1: Number of Years of Meranaw Farmers in Sakurab Farming

Farming Practices

The farming practices explored in this investigation include land preparation, planting methods, farm management techniques, harvesting, number of yields, storing, and the marketing strategy of *sakurab*. As shown in Figure 2, the ten Meranaw *sakurab* farmers employ various land preparation techniques; they do not use only one technique for their land preparation. From Figure 2, it is noted that all of them usually use plowing and harrowing, while nine often do manual tilling of their farms. They also use the slash-and-burn method, plowing only once with the use of animals and applying the mulching technique on their farms. Only very few of them do mowing and harrowing.

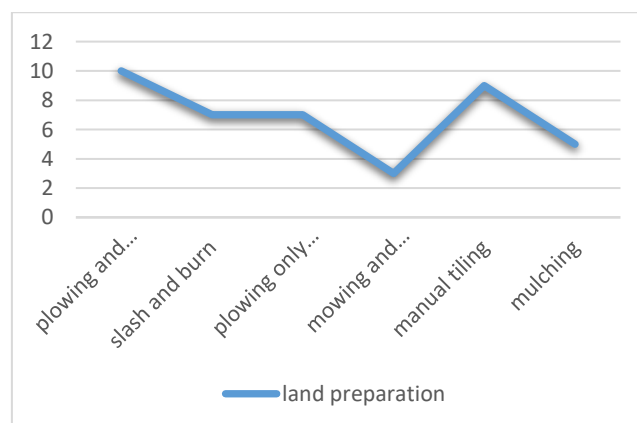


Figure 2: Land Preparation Technique

Planting Method

As shown in Table 2, all (100%) of the *sakurab* farmers' planting method is that of transplanting. As they indicated the interview, they usually have *sakurab* mother plants; they allow them to grow into multiple bulbs and then transplant each bulb in the prepared farm area. When asked where they obtained their planting supplies, they said that these were already available on their farms as they had inherited their farms from their parents. However, according to research among *sakurab* farmers, as they recalled from their forefathers, the original source of their *sakurab* came from China. They did not know the details of how it arrived in the Philippines, specifically in Lanao del Sur. Regarding the depth of transplanting, 40% of them manage to plant them between four to five inches deep, while others said that they planted between three to four inches deep. The depth of the seed is also an important management consideration. In terms of the distances between each transplanted *sakurab* plant, most (80%) employed a 10 cm-distance while others preferred five to ten cm or 12 cm which comprise 10% of the participant farmers, respectively.

Table 2: Planting Method Employed among *Sakurab* Farmers

Planting sakurab	f	%	mean
a) Planting method			
transplanted	10	100	1.0
b) Depth			
3 inches	1	10	0.1
4 inches	4	40	0.4
3-4 inches	1	10	0.1
4-5 inches	4	40	0.4
c) Distance			
10cm	8	80	0.8
12cm	1	10	0.1
5-10cm	1	10	0.1

The tools that they usually use in transplanting or planting the *sakurab* are their own improvisations. For making holes in the soil, they use a tool called *buso* (Figure 3), and to maintain the distances between each plant, they use an *ansag* or bamboo mat (Figure 4).



Figure 3: *Buso*

An improvised tool used by farmers for making a hole to plant the *sakurab*. This tool is made of a sharp-pointed polished iron nail



Figure 4: *Ansag*

A bamboo mat used to maintain an equidistance between each planted *sakurab*

Farm Management Techniques

Table 3 shows how the *sakurab* farmers manage their farms in terms of weed control, moisture control, and fertilizer and pesticide application. Controlling or removing weeds is an important aspect to consider in farming. It can be done manually, mechanically or chemically. In the case of the Meranao *sakurab* farmers, they remove the weeds manually. As shown in Table 3, 50% of them tend to remove weeds every week, while the other 50 % will weed the area every two weeks.

Table 3: Farm Management of *Sakurab* Farmers

Farm management Techniques	f	%	Mean
a) Weed removal			
Every week	5	50	0.5
Every 2 weeks	5	50	0.5
b) Moisture control			
Mulching is used	10	100	1.0
No mulching	0	0	0
c) Fertilizer used			
Organic	0	0	0
Inorganic	10	100	1.0
d) Method of fertilizer application			
Spreading	6	60	0.6
Sprinkling by hand	1	10	0.1
During planting	3	30	0.3
e) Number of applications of fertilizer			
3x per cropping	5	50%	0.5
4x per cropping	5	50%	0.5
f) Pesticide application			
none	10	100	1.0

Weed control is a chore among farmers regardless of the methods they intend to use. For moisture control of their farm or to avoid drying of soil on their farm, all of them (10 or 100%) use *ampas* (mulching) using corn straw and other organic materials (Figure 5). Meranao *sakurab* farmers use mulching to cover the soil surface to maintain the soil temperature.



Figure 5: *Ampas* (Mulching) Technique

For fertilizer application, all (10 or 100%) of the farmer respondents use solid inorganic fertilizer and have never tried to apply organic fertilizer. Meranao *sakurab* farmers usually apply fertilizers to their *sakurab* crops by spreading, hand sprinkling, or simultaneously adding to the soil as they plant the *sakurab*. This applies to 60%, 10%, and 30% of the *sakurab* farmers, respectively. They also apply the fertilizer three or four times per cropping. Since *sakurab* can be harvested about four months after planting, if they apply fertilizer four times per cropping, this usually means a monthly application of fertilizer. Surprisingly, findings show that none of the *sakurab* farmers use any pesticides on their farms.

Harvesting, Number of Yields, Storing and Marketing Strategy of Sakurab

Table 4 shows how soon the farmers can harvest their crops, how much is yielded, their storing techniques, as well as the marketing strategies of their harvested *sakurab*. As shown in Table 4, 70% (7 out of 10) *sakurab* farmers claimed that they can harvest their *sakurab* four months after replanting, while 20% (2 out of 10) claimed that they can harvest their *sakurab* 4.5 months after replanting. Only one farmer said that the *sakurab* it can be harvested three months after replanting. The farmers also manually harvest their *sakurab* using traditional tools such as *bolo*, *piko* or *sarol* to uproot the *sakurab* from the soil.

Table 4: Harvesting, Number of Yields, Storing and Marketing of *Sakurab*

Harvesting, yield, storing and marketing	f	%	mean
a) Harvesting period			
3 months after planting	1	10	0.1
4 months after planting	7	70	0.7
4.5 months after planting	2	20	0.2
b) Methods in harvesting			
Manual by the use of <i>bolo</i> and <i>piko</i> or <i>sarol</i>	10	100	1.0
c) Yield per cropping			
15,000 bundles	1	10	0.1
20,000 bundles	2	20	0.2
25,000 bundles	1	10	0.1
30,000 bundles	3	30	0.3
40,000 bundles	3	30	0.3
d) Marketing strategies of <i>sakurab</i>			
Direct selling	1	10	0.1

Deliver to the contact buyer in the market (<i>suki</i>)	1	10	0.1
Deliver wholesale in the market	1	10	0.1
Contact buyers first before harvesting	6	60	0.6
Direct selling and delivery to contact buyers	1	10	0.1
e) Storing of harvested <i>sakurab</i>			
Placing in the sack and avoiding direct contact with the sun	10	100	1.0



Figure 6: Harvesting *Sakurab*

In terms of the number of yields, they count it according to bundles. Their yield varies in relation to the size of their *sakurab* farm. As indicated in Table 1, each farmer has a different farm size, therefore there are no specific numbers of yields. The highest number of yields is 40,000 bundles, which is claimed by three out of 10 (30%) *sakurab* farmers, followed by 30,000 bundles, 25,000 bundles, 20,000 bundles, with 15,000 bundles as the least number of yields which is claimed by one out of the *sakurab* farmers. Each farmer has their own marketing strategies for their harvested *sakurab*. Six out of 10 (60%) farmers contact buyers first before harvesting, while the rest of the farmers employ one of the following strategies, namely direct selling, personally selling the *sakuraba* in the market or through *paglalako* along the populated streets; delivering the market to the contact buyer (*suki*); delivering it wholesale to the market; and direct selling and delivery to contact buyers. However, after they have harvested their *sakurab*, they do not immediately sell it to the market; they usually first tie it into bundles and place it over sacks as shown in Figure 7:



Figure 7: Bundled *sakurab* ready for selling and storing

Lived Experiences of Meranao Sakurab Farmers

The lived experiences of Meranaw *sakurab* farmers were explored through interviews and farm observations. Based on the collected information, four themes emerged to describe the lived experiences of the farmers, namely (a) legacy; (b) change and support; (c) technology and technological skills. and (d) struggling to succeed.

Theme 1: Legacy

Legacy is the theme used to describe the farmers' response when they were asked what brought them into farming. According to their statements, they become *sakurab* farmers since that has been the source of the livelihoods of their parents since they were young. Other also said that they become *sakurab* farmers since they married the daughter or son of *sakurab* farmers. It can be deduced from the excerpts shown that being a *sakurab* farmer is a legacy that is handed down from the parents to their offspring. The excerpt below is quoted as relevant to support these claims using their assigned numbers:

Farmer 1 said:

Since my parents do farm sakurab, then I am encouraged to follow their footstep to continue farming sakurab.

Farmers 2,4, and 5 said:

I started sakurab farming since I got married with my wife because planting sakurab is them family livelihood, and I learned from them how to farm sakurab and become the source of our income to sustain my family needs.

All other farmers said:

We became sakurab farmers because our parents are sakurab farmers. That is our family livelihood since we are still a child.

Theme 2: Change and Support

This theme is used in describing the farmers' experiences in farming when they were asked questions number 2, 3, and 4. When they were asked whether there is any difference between their farming and that of 10-20 years ago, they all agreed there was, stating the following reasons:

Yes, because before we don't know how to manage our farm, but now we have new knowledge and techniques in farming like using mulching, and fertilizer in our sakurab farm (Farmers 1,3,5, 6, 7, and 9).

Farmers 2 and 10 said:

Yes, of course, like before we can only sell our sakurab in Marawi City, but today we can sell it in many market outlets and anywhere.

While farmers 4 and 6 said:

Yes, because before we have a very little income in sakurab farming, but now our income increases

When they were asked about what the biggest change is that they have encountered during the years of their farming, they said:

The biggest change that we have in farming sakurab is about managing our farm. Before we have a very little knowledge on how to manage our farm but now, we learn how to manage our farm (Farmers 1,4,5 and 6).

The biggest change in farming sakurab now is that we can easily sell our products in which can sustain our daily needs, and support our children education (Farmers 2, 8 and 10).

The biggest change now is that we learn new techniques in farming like using mulching and fertilizer in our farm (Farmers 3,7, and 9).

When they were asked about the roles of their family members in farming, all of them said that as the head of the family, they usually do the farming; however, sometimes their wives and children assist them on the farm. Below are some excerpts from an interview:

My sons help me in planting the sakurab and my wife help me in harvesting the sakurab (Farmers 2, 9, and 10).

My wife helps me in planting sakurab, and my sons help me in the land preparation (Farmers 7 and 8).

Yes, my family help me in the farm, and my wife is the one who usually help me in planting the sakurab (Farmers 1 and 5).

My father helps me on how to prepare the land for my sakurab farm, and my brother in laws help me in the planting of sakurab (Farmers 3 and 6).

Only my son helps me in the farm (Farmer 9).

Based on the excerpts above, it can be said that farming needs change in the form of support from the family. There are no constant practices in farming and farming can change the way of life among farmers. Changes in farming are inevitable and farming can be successful with the help and cooperation of the family.

Theme 3: Technology and Technological Skill

The importance of technology is the theme used in describing the experiences of *sakurab* farmers according to their responses to questions 5-8.

When they were asked about the technology they usually use in their farming, they said that they only use traditional tools for the manual labor of farming, as well as the help of their farm animals. The following are general responses:

We use farm animals through plowing the field for the land preparation of our farm. We also use bolo and rake for manual cleaning of weeds and grasses. However, some of us don't have farm animals, we do the land preparation manually using our traditional farm tools which is the bolo, rake, sarol or piko.

For planting the sakurab we made an improvised tool "buso" a sharpen iron nail that is use for burrowing/ digging the soil to plant the sakurab, and the "ansag" a bamboo mat which we use to maintain the equal distance of each planted sakurab.

In terms of caring and managing the farm, we apply fertilizer in our sakurab farm, sometimes 3 times or 4 times per cropping depending on our budget, and we regularly remove grasses and weeds every week or every 2 weeks. We have only small farm size for our sakurab, some of our sakurab farms are fence, and or intercropped with corns and other crops to protect them from rats and other animals that will destroy our sakurab.

We believed that technology help a lot in our farming especially the modern technologies in farming, but we don't have the capacity to buy such technology and we don't have the ability to use the modern technology as well.

Technology plays a vital role in successful farming, whether it be traditional or modern technology. Small-scale farmers such as the Meranao *sakurab* farmers opted to use traditional technology on their farms since they only have farms of a limited size, limited capacity as well as limited capability to handle and manage the modern technology.

Theme 4: Struggling to Succeed

This theme was used in capturing the farmers' struggles towards success in their *sakurab* farming when they were asked questions 9 and 10. When asked about the hardest part they have experienced in farming as well as their most unforgettable experiences, all of them expressed almost similar sentiments. The excerpts below are their opinions that could be described as struggling to succeed. When they were asked "What is the hardest part in farming for you?" they said the following:

Farmer 2:

The hardest part in farming sakurab is that when no one helps you in the farm. There are times that I can't finish my work due to my overfatigue.

Farmers 1, 4, 6 and 8:

The hardest part is during transplanting/planting the sakurab because it is done manually using "buso" sharpen iron nail as the planting tool.

Farmers 3,5, 7 and 10:

The hardest part in sakurab farming is the land preparation because grasses should be removed, and we dig the soil manually and then we do furrow.

Farmer 9:

The most difficult for me in my sakurab farming is to secure "ampas" mulching materials that can be placed in my sakurab farm.

When the farmers were asked about their most unforgettable experience in farming *sakurab*, their replies were as follows:

Farmers 1 and 10:

I cannot forget that due to my sakurab farm I reap the fruit of my labor in which I was able to buy a cow that helps me in the farm right now.

Farmer 2:

My unforgettable moment in sakurab farming was that when I earned 120,000.00 as my sales in which I used to buy motorcycle and cow and build a house for my family.

Farmer 3:

My unforgettable experience in my sakurab farming is that I sold my products worth 50,000.00 which was used by my wife for her board examination.

Farmers 5, 7, and 9 also had similar unforgettable experiences to those of farmers 2 and 3 when they earned a great deal from their *sakurab* farm, namely 70,000.00, 85,000.00, and 76,000.00, respectively. This helped them considerably in meeting their needs and buying farm animals, building a house, and buying fertilizers, among others.

Farmer 4:

My unforgettable experience was that during the time that there was no available motor for transportation, in which I personally carried my sakurab to the market. I was not able to forget those memories because I can reflect it to myself on the sacrifices, I had to make my farm in good ways.

Farmer 6:

I will never forget in my sakurab farming during the time that my father and me is working in the farm when he was still alive in which he taught me how to farm the sakurab properly.

Farmer 8:

My unforgettable experience was that when my planted sakurab was burnt and I thought they died, but to my surprise after 1 month they regrow and become healthy which I became very happy.

Regarding support from the local or national government, they all said that they did not receive any assistance from the government. Based on the quoted excerpts above, it is notable that success can only be attained by hard work. Success does not come easily but rather after struggling and much hard work.

Discussion

The profile of the participants indicated that they are well-experienced in *sakurab* farming since they already have more than 10 years of experience. A research study conducted by Guo et al. (2015) pointed out that elderly farmers who do not intend to abandon farming had a higher agricultural output compared to other farmers. Farmers of different ages operate with different technologies and use various inputs with different levels of efficiency, while age also affects their preferences and agricultural output. On the other hand, the low level of education attained by the farmers could be considered as a factor that negatively influences their farming practices and management. Paltasingh and Goyari (2018) analyzed the effects of education on farm productivity and found that education enhances farm productivity where modern technology is adopted.

The farming practices of the participants as indicated in the findings of the study conform with the standard agricultural farming practices which follow different planting methods according to the crops planted. According to Manik (2019), the recommended planting depth is three to five cm below the soil surface for seeds. However, for other crops, the depth may vary. Farm management was also based on scientific standards of farming in which weeding, mulching, and fertilizing the crops are used. Lawrence (2019) pointed out that weed control is very important because weeds can interfere with the growth and yield of the crops, and sometimes carry pathogens that can damage the crops. Weeds can compete with plants for water and nutrients, thereby reducing yields and causing economic loss (Kennedy, 2018). According to Wang et al. (2015), the selection of an appropriate mulching material depends on the types of materials, ecological locations, colors, thickness, perforations, availability of materials, cost-effectiveness, and the feasibility of the crop. Iqbal et al. (2020) mentioned in their study that the selection of materials for mulching is very important and should be based on the types of crop, management practices and climatic conditions of the farm area.

Several research findings also revealed that natural and organic mulching can increase soil organic matter (Monquero et al., 2009), can improve the efficiency of water usage among plants (Kirnak & Demirtas, 2006), and can prevent erosion and changes in the physical composition of the soil

(Pereira et al., 2011). Mulching is very important for preserving soil moisture and regulating the temperature in the soil by providing a buffer from extreme cold and hot temperatures. They stressed that mulching is also a suitable method of weed control apart from maintaining the soil temperature which is beneficial for overall crop growth (Kader et al., 2019). Mulching is also favorable for maximum yield with very low input resources, and has a crucial impact as a water-saving technique in rain-fed crop cultivation such as the *sakurab*. The research findings of Yu et al. (2018) concluded that mulching helps improve crop growth as well as yield while at the same time optimizing water use among plants. Furthermore, several studies have also shown that mulching reduces weed growth, resulting in improved crop vegetative growth and yield (Mzabri et al., 2021), and could serve as an efficient technique to enhance overall crop growth, development and yield (Iqbal, 2020). The research findings of Teame et al. (2017) also revealed that organic mulching had a significant effect on soil moisture content, growth and yield of crops.

Moreover, studies have shown that the application of organic fertilizer to crops is more beneficial than that of inorganic fertilizers. Using organic fertilizer on crops can produce higher yields and be more environmentally friendly than inorganic fertilizers (Sofyan et al., 2019). Using organic inputs such as crop residues, manures, and compost has greater potential to improve soil productivity and crop yield compared to inorganic chemicals. Organic fertilizers can also improve the physical, chemical, and microbial properties of the soil, thereby enhancing its nutrients (Sofyan et al., 2019). However, the participants of this study never use organic fertilizers since all of them apply inorganic fertilizers. In addition, their technique in fertilizer application is based on the standard method of fertilizer application. The TNAU Agricultural Portal on nutrient management mentioned that solid fertilizer can be applied in various ways such as broadcasting, placement, band placement and pellet application. Fertilizer application should follow the 4 Rs, namely Right amount, Right fertilizer, Right place and Right time (Oldham & Jones, 2020).

Conclusion

This paper aimed at investigating the farming practices and lived experiences of Meranao *sakurab* farmers in Lanao del Sur, specifically with the following objectives: (a) to describe the socio-demographic profile of the Meranaw *sakurab* farmers; (b) to determine their farming practices; and (c) to reveal their lived experiences in *sakurab* farming. Based on the gathered data, the farmer participants were all male, well-experienced in farming but operating a small-scale farm. Farmer participants employed hybrid farming practices which are an amalgamation of traditional and non-traditional techniques. The tools they usually use in planting are traditional tools which they have improvised. Their farming practices and farm management conform to the standard farming practices, motivated by sustainability to support their family needs. It can be said that farming is not an easy task. However, to be successful, farmers should consider farming as a way of life with a definite purpose and according to recognized farming principles. This study concluded that the Meranao *sakurab* farmers are responsible farmers, combining various techniques in their practice. It is suggested that farmers should not focus on subsistence farming alone but should rather consider the ecological environment to enable sustainable farming and agriculture.

Recommendation

Based on the findings and conclusions, the following are recommended:

- 1) Regular seminars and workshops on farming techniques should be conducted for the farmers – not only the Meranao farmers but all farmers in provinces who are deprived of support services and techno-transfer to improve their farming techniques and practices.
- 2) Farmers should be encouraged and trained in organic farming.

- 3) The government should allocate funds and properly provide such funds to the farmers as a form of assistance to augment the production of their farms.
- 4) A combination of traditional and modern methods of farming should be promoted that can be used for sustainable agriculture.
- 5) The department of agriculture and other related agencies should distribute pamphlets containing basic information about farming practices and techniques. These should be written or translated according to the dialect of the farmers (If Meranao, use Meranao dialect; if Subanen, use the Subanen dialect).
- 6) Academic institutions need to initiate support services and techno-transfer in developing the *sakurab* farmers' skills to promote the sustainability of their production.

Limitation of the study

The major limitation of the study is the small number of samples, while the research area was confined to a single municipality owing to limited time, and the peaceful and orderly situations of some other areas. However, this study is developmental in nature and could be replicated to include all municipalities in the Province of Lanao del Sur through collaborative or group research. Furthermore, more variables could be investigated and correlated.

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