

# A CONCEPTUAL MFARM BUSINESS MODEL: MOSQUE AS A SUSTAINABLE FARMING CENTRE, RESKILLING AND NURTURING B40 AS AGRO- PRENEURS

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**ABSTRACT:** This business model paper explores the potential of utilising mosque space for farming with the aim of assisting low-income and B40 communities. The purpose of this paper is to develop a conceptual business model including a digital platform and application as well as to assess the feasibility of this concept and address the growing demand for locally grown and organic produce, while also providing an opportunity for the mosque to generate additional revenue streams. The paper outlines the methodology used, which is Design Thinking, by conducting literature review (LR), benchmarking and survey to further understand the problem that later helps in creating our own business case model (BMC) and Value Proposition Canvas (VPC). It also highlights the potential social and environmental benefits of this model, such as increased community engagement and the reduction of carbon footprints through localised food production. The proposed business model aims to create a new paradigm for sustainable food production, with mosques serving as community hubs for education, training, and innovation in the field of urban farming. The paper concludes by outlining the potential challenges and risks involved in this venture and proposes strategies to mitigate them. Ultimately, this business paper represents an exciting opportunity for mosques to become leaders in sustainable food production and community engagement. This conceptual business model would also provide educational opportunities for members of the community to learn about urban farming, nutrition, and healthy eating habits. By focusing on serving low-income and B40 communities, the business aims to address food insecurity and promote equitable access to healthy, locally grown produce. This would help to improve the overall health and well-being of the community, while also providing economic opportunities for low-income individuals to participate in the farming and distribution of produce.

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**KEY WORDS:** *Mosque Space, Sustainable Farming, Community Engagement,  
Sustainable Practices, Business Model, B40, Agropreneurs*

## 1. INTRODUCTION

Mosques are an integral part of Muslim communities worldwide, serving not just as places of worship but also as centres for social, cultural, and educational activities. In recent years, there has been a growing interest in utilising the unused land around mosques for community development purposes (Mourad, 2021). Many low-income communities face significant challenges in accessing fresh and nutritious produce, leading to increased rates of food insecurity and related health issues (Urban Hijau, 2022). Additionally, mosques, as religious and community centres, often have underutilised spaces that could be repurposed for productive use. This creates an opportunity to address both the pressing need for accessible food options and the untapped potential of mosque facilities. Therefore, there is a need to develop innovative solutions that leverage the resources and spaces within mosques to establish sustainable farming centres, benefiting both the low-income communities and the mosques themselves.

The challenges involved in this concept of business include limited land space and resources, regulatory hurdles and the need for community support. Additionally, low-income communities may face challenges such as limited access to cheap and healthy food (Vilar-Compte, 2021) and lack of economic opportunities (Murad et al., 2019) which need to be addressed to ensure the success of this initiative. However, the gains that could result from utilising mosque land space for farming are numerous, including increased food security, improved community engagement and promotion of sustainable practices. Moreover, this business concept has the potential to create economic opportunities and provide training and education for community members. The job-to-do is to develop a sustainable business model that takes into account the needs of low-income communities, creates economic opportunities and encourages community involvement. This involves identifying appropriate crops and farming methods, securing funding and resources, establishing partnerships with local organisations and government agencies as well as educating and training community members.

Moreover, the global pandemic has highlighted the need for communities to be self-sufficient and resilient in the face of unexpected crises. The Great Reset (Schwab & Malleret, 2020), a global initiative launched by the World Economic Forum in response to the pandemic, aims to create a more sustainable, equitable, and resilient world. This paper aligns with the goals of the Great Reset by promoting sustainable food production, community engagement, and environmental stewardship.

Furthermore, this paper aligns with the United Nations Sustainable Development Goals (SDGs), a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. Specifically, this initiative contributes to SDG 2: Zero Hunger, by promoting sustainable farming practices and providing access to fresh, nutritious food for the community. Additionally, it supports SDG 13: Climate Action, by implementing environmentally-friendly practices and reducing the carbon footprint associated with food production. Along with SDG 1: No Poverty, SDG 4: Quality Education, SDG 8: Decent Work and Economic Growth, by simultaneously providing practical farming and farming training to the low-income communities who may have limited access to formal

education so they can acquire skills and knowledge necessary to become successful agropreneurs and cultivate sustainable livelihoods.

Compared to a traditional community-supported farming (CSA) program, which are typically run by independent farms or cooperatives, the use of a mosque as a farming centre could offer several advantages especially when there are 6,830 mosques and 18,360 surau in Malaysia which were based on the data obtained from Department of Islamic Development (JAKIM) website. With 63.5% of the population in the country identifying as Muslim based on data from MyCensus Official Portal, there is a large potential customer base within the local community for a business that utilises a mosque as a farming centre.

## 2. OBJECTIVES/PROBLEM STATEMENT

The main objective of this paper is to develop a conceptual business model including a digital platform and application that offers and provides a service as pain relievers and gain creators mainly focusing on proposing a comprehensive and innovative approach to sustainable food production and community development, leveraging the unique resources and opportunities presented by mosques. The proposed paper seeks to provide not only fresh produce for the community but also educational resources, community engagement opportunities, and a platform for promoting sustainability. By aligning with the Sustainable Development Goals (United Nations, 2015) and the Great Reset initiative (Schwab & Malleret, 2020), this business paper aims:

- a. To propose a sustainable and innovative solution for utilising the unused land around mosques as a farming centre.
- b. To address the pressing need for sustainable food production and community development by converting the unused land around mosques into a sustainable farming area (The Food and Land Use Coalition, 2021).
- c. To provide fresh and affordable agro-based products for the community, focalized on the low-income and the B40s, while also serving as a space for education and community engagement and upskilling.
- d. To help upskilling the low-income and B40 communities by creating job opportunities while nurturing them to become agropreneurs.
- e. To leverage existing resources such as parking facilities, and a built-in community of supporters to make the initiative more cost-effective and efficient.
- f. To provide educational resources and community engagement opportunities to encourage greater participation and involvement in the farming centre's operations.
- g. To align with the Sustainable Development Goals, particularly SDG 2: Zero Hunger and SDG 13: Climate Action, contributing to the global effort towards a more sustainable, equitable, and resilient future.
- h. To contribute to the Great Reset initiative, which seeks to build a more sustainable, resilient, and equitable future in the wake of the COVID-19 pandemic.

### 3. METHODOLOGY

The methodology chosen to develop this business model paper is done using design thinking, widely recognized as the five stages of the Design Thinking process (Brown, T. 2008) by emphasizing empathy with users, generating creative ideas, prototyping, and testing to create effective solutions. It can be applied to various fields, including business, to develop a business case paper. The following are the steps used as a methodology to develop this business case paper:

- a. *Empathise*: Understand the problem and the needs of the customer segments involved. Conduct literature review to gather insights and understand the needs and desires of the customer segment. This step helps to identify the challenges, opportunities, and requirements for the business case such as the extreme pains and essential gains related.
- b. *Define*: Based on the insights gathered from the empathize stage, define the problem statement, scope, and objectives of the business case. This stage helps to clarify the problem and ensure that everyone is on the same page.
- c. *Ideate*: Brainstorm solutions to the problem statement. Encourage creativity and generate multiple ideas. This stage helps to identify potential solutions and possibilities that can be included in the business case.
- d. *Prototype*: Create a prototype or conduct initial testing. This stage helps to test the solution and identify any flaws, improvements and requirement changes that need to be made.
- e. *Test*: Test the prototype with the customer segments involved and gather feedback. This stage helps to refine the solution and ensure that it meets the needs of the customer segments.
- f. *Implement*: Based on the feedback gathered from the testing stage, implement the solution and create the business case paper. This stage involves presenting the proposed solution, its benefits, costs, and potential outcomes to the customer segments.

By using design thinking as a methodology, the business model paper will be more user-centred, creative, and effective. It will address the needs of the stakeholders and provide a viable solution to the problem statement.

### 4. LITERATURE REVIEW

#### 4.1. 4IR in Smart Farming

The adoption of cutting-edge technologies like artificial intelligence (AI), the Internet of Things (IoT), and robotics by established businesses is known as the Fourth Industrial Revolution (4IR). Mosque settings can also benefit from smart farming, particularly in nations where farming is a big business. Here are a few ways that mosque smart farming can make use of the Fourth Industrial Revolution (4IR). Farmers can first monitor soil moisture levels, temperature, and other environmental conditions in real-time by employing precision farming tools like IoT sensors. Making informed judgements about crop management using this data will lead to more effective use of nutrients and water. Second, mosques with insufficient area for conventional farming techniques may consider vertical farming. Vertical farming allows crops to be grown in stacked levels, requiring less area yet producing

more. In addition, using AI and robotics in mosque farming might automate laborious operations like planting and harvesting, saving up farmers' time for more important activities. Last but not least, mosques can lessen their reliance on non-renewable energy sources and lessen their carbon footprint by using renewable energy sources like solar panels. In conclusion, 4IR may greatly enhance mosque farming operations, making them more productive, long-lasting, and affordable.

Al Hasanah Mosque, Bandar Baru Bangi is a 'model farm' in Urbankit Project and has as many as 70 urbankit units tested. The Urbankit project is a collaboration of Al Hasanah Mosque and MARDI that cost RM150,000 which is fully funded by the MOSTI Grant (Ministry of Science, Technology, and Innovation). It is an aquaponic method which is a concept of a combination of aquaculture and hydroponics that produces fish and vegetable or fruit farming that can develop urban agricultural products as well as save the cost of kitchen items and even care for the environment. The urbankit technology not only saves costs but the urban farming technology helps users obtain food resources in limited residences. The technology has been widely accepted in schools, mosques, companies and the general public. This urbankit innovation can help the asnaf and the poor in generating their own income.

#### **4.2. Unemployment Rate in Malaysia**

According to the Department of Statistics Malaysia, Malaysia's unemployment rate as of September 2021 was 4.8%. The Malaysian economy and labour market have been significantly impacted by the COVID-19 outbreak, increasing unemployment rates. As compared to December 2022, when there were 599.6 thousand jobless people, there were 596.1 thousand people in January 2023, a 0.6% (-3.5 thousand) decrease. The month-over-month unemployment rate stayed at 3.6%.

##### **4.2.1. Unused Waqf Land in Malaysia**

According to Datuk Jamil Khir Baharom (Minister at the Prime Minister's Department), Malaysia has approximately 9,937 hectares of unused waqf land worth RM1.9 billion. He also stressed that this waqf land must be developed efficiently and methodically in order to benefit Muslims. Furthermore, Daud Vicary Abdullah (President and CEO of INCEIF) stated that waqf with effective administration and implementation has significant spiritual and economic potential. Waqf land developers in Malaysia face a number of challenges, including a lack of financial support. Another challenge for the development of waqf land in Malaysia is that in recent years, many donors have expressed a desire to reclaim their waqf lands, owing to the high value of most waqf lands and properties. Johor has the most total waqf land in terms of size and market value. In terms of size, Sabah has the most total general waqf land, while Terengganu has the most specific waqf land.

#### **4.3. Reskilling and Upskilling in Malaysia's post-COVID-19 Job Market, and the Initiatives by the Malaysian Government**

However, it is important to note that reskilling and upskilling initiatives should also address the increasing demand for digital competencies in the job market. The pandemic has accelerated the digital transformation of various industries, leading to an increased need for workers with digital skills such as data analytics, digital marketing, and cybersecurity. Thus, while initiatives like the NCER Strategic

Development Plan are valuable in providing opportunities for reskilling and upskilling in traditional industries such as farming, it is also essential to equip workers with digital competencies to meet the demands of the future workforce.

To address this, the government could consider implementing initiatives that provide opportunities for B40s or retrenched workers to acquire digital skills. For example, the government could collaborate with tech companies to provide training and certification programs in areas such as data analytics, cybersecurity, and digital marketing. Additionally, the government could offer incentives such as tax breaks to companies that hire and provide training for workers with digital competencies.

Overall, reskilling and upskilling initiatives are critical in mitigating the adverse effects of the pandemic on the job market as highlighted in the article by Wong (2020). The NCER Strategic Development Plan is a valuable initiative that provides opportunities for B40s or retrenched workers to acquire new skills and become agropreneurs. However, it is important to also address the increasing demand for digital competencies in the job market to ensure that workers are equipped with the skills necessary to meet the demands of the future workforce.

#### **4.4. The Concept of Mosque**

The Prophet's Mosque served as a community development centre where a variety of activities were carried out, including prayer groups, collective religious practices, and providing necessary social amenities and services (Omar et al., 2019; Spahic, 2020). It was the first city component that Rasulullah s.a.w. institutionalised in Madinah. Although Muslims generally view the mosque as a hub for civic engagement and empowerment, it frequently straddles the line between a place of ritual and a centre for human empowerment. In order to maintain the mosque's responsibilities and duties, it is imperative to implement a variety of systems, particularly in the post-pandemic and digital eras (Omar et al., 2019; Spahic, 2020).

The mosque is not just a physical structure, but it also represents a group of believers who are bound together by a shared desire to please Allah (Mufti of the Federal Territory's Office, n.d.). It is a place of worship where believers congregate to perform their religious duties and stand together in prayer, fostering a sense of community and support that is essential to the Islamic faith. However, the mosque should also serve as a place for *ijtihad*, the exploration of science, as well as the development of skill, creativity, and professionalism, and *jihad*, the fight against the enemies represented by poverty, ignorance, dependence, and marginalisation (Sarwono, 2003). The mosque should take the initiative to empower society by creating jobs, supplying wholesome food sources, and encouraging entrepreneurship among the B40 community by utilising the mosques' resources and facilities (Salleh, 2013; Dahlan et al., 2021). Mosques, therefore, should be preserved as the hub of Muslim activity as they fulfil their duty as the caliphate on earth.

#### **4.5. Benchmark of Business Model**

Mfarm's development requires benchmarking, which is an essential component. It allows us to find areas where our company could evolve. We can also determine the present advantages and disadvantages with the aid of extensive research. Additionally, this study's recommendations for alternative approaches

and guidance on how to avoid implementation blunders will be helpful. Due to the literature review, innovative and new concepts for attributes and benefits that could be incorporated into the MFarm business model will be produced.

#### 4.5.1. Commonland (<https://commonland.com/>)

Commonland is a Netherlands-based company that works with local communities to restore degraded landscapes and create sustainable farming systems. The company's approach is based on the concept of a "4 Returns Framework", which aims to create returns on social, natural, inspirational, and financial capital. A study by Schaepkens et al. (2020) examined the effectiveness of Commonland's approach in the Zona Cafetera Project in Colombia. The study found that the project had successfully restored degraded coffee landscapes and improved the economic opportunities for local coffee farmers. The study also noted the importance of using agroforestry practices and restoring natural ecosystems to achieve sustainable outcomes. A report by the United Nations Environment Programme (UNEP) (2021) noted the importance of landscape restoration in achieving sustainable development goals and highlighted Commonland's approach as an innovative model for sustainable land use practices. Another study by IUCN (2020) examined the economic benefits of landscape restoration, noting that restoration projects could create new economic opportunities for local communities and generate significant returns on investment.

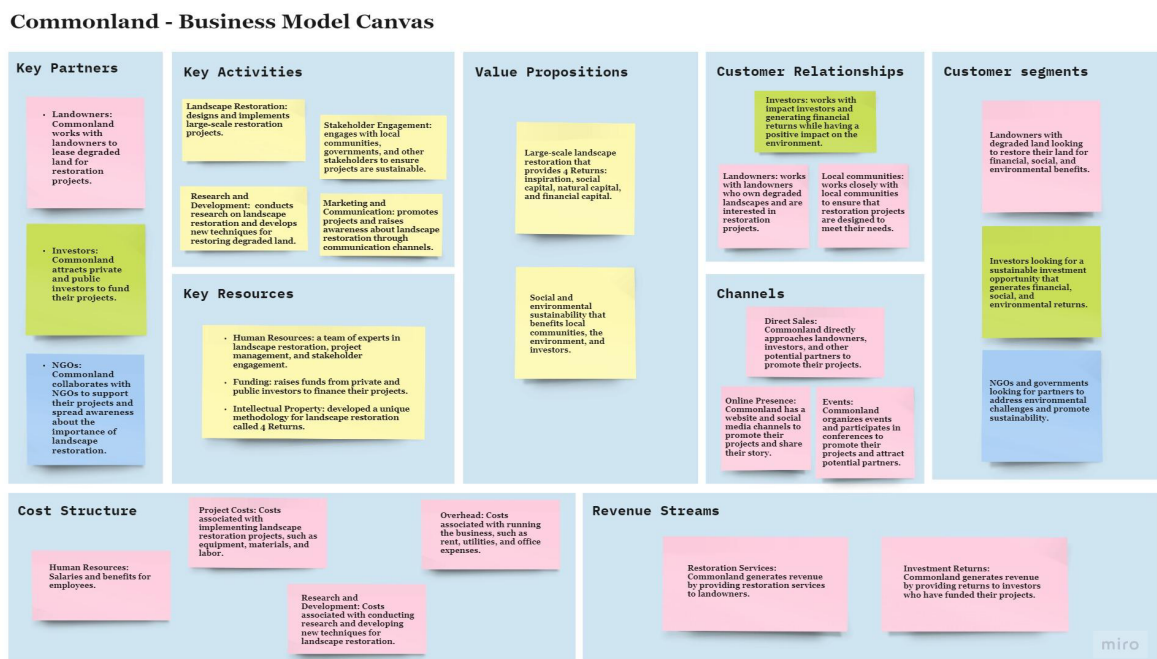


Fig. 1. Common land Business Model

#### 4.5.2. GreenBronx Machine (<https://greenbronxmachine.org/>)

Green Bronx Machine is a non-profit organisation established by Stephen Ritz in 2011, located in the Bronx, New York. Its main objective is to use urban farming to educate and empower students in underserved communities. The organisation uses a hands-on approach to teach children how to grow food, and

provides them with a foundation in science, maths, and healthy eating habits. (Green Bronx Machine, 2020). To assess the effects of Green Bronx Machines' programmes on students and community, numerous studies have been carried out. According to a review of the relevant literature, the organisation significantly improved students' academic performance, health and wellness, and involvement in the community. Green Bronx Machine's target market appears to be students in classrooms and after-school programs, as well as community members interested in healthy eating, sustainability, and urban farming.

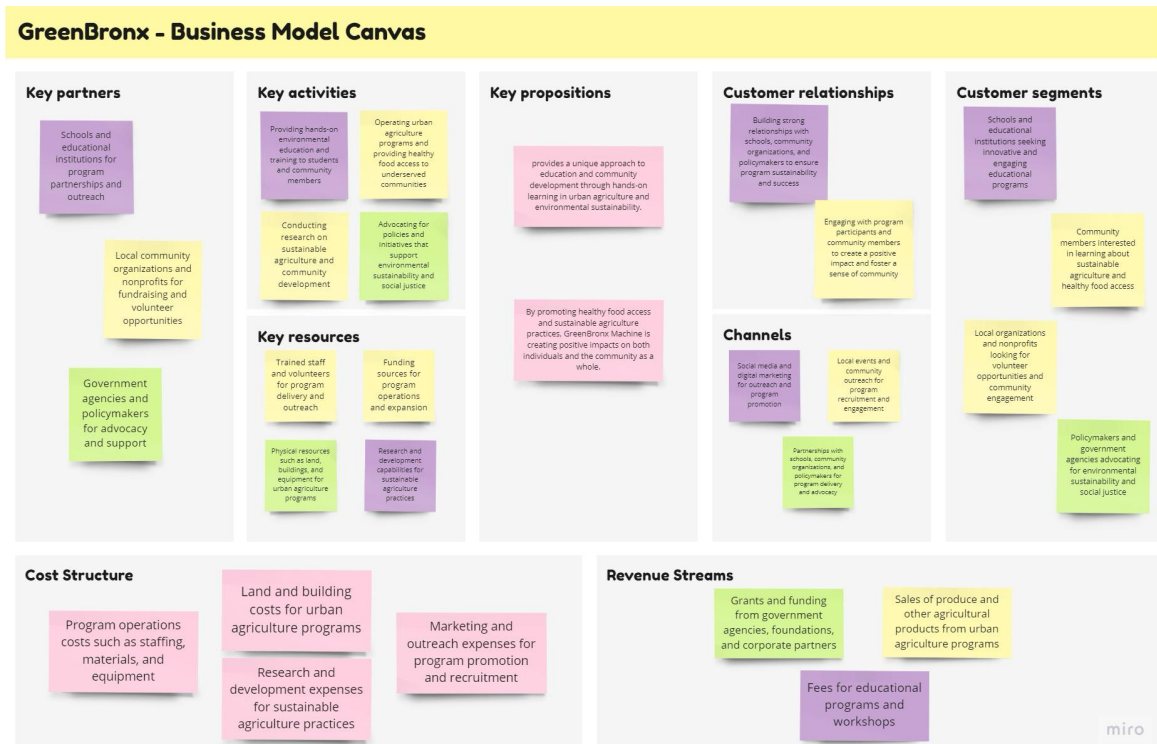


Fig. 2. GreenBronx Machine Business Model

#### 4.5.3. Farm Africa (<https://www.farmafrica.org/>)

Farm Africa is a UK-based charity that has been working with smallholder farmers in Africa for over 35 years to increase food security and improve livelihoods through sustainable farming. FarmAfrica has worked with over 2.4 million farmers in Ethiopia, Kenya, Tanzania, and Uganda, helping them increase productivity, diversify crops, and improve access to markets. (Omamo and von Braun (2008). The promotion of conservation farming and drought-tolerant crops has led to significant increases in yields and income for farmers. However, the organisation faces challenges such as the lack of infrastructure and the impacts of climate change, which they address through improving rural infrastructure and promoting climate-smart farming practices. (De Pinto et al., 2019). Despite these challenges, FarmAfrica has positively impacted smallholder farmers in Africa through innovative approaches to improve food security and livelihoods in rural areas.



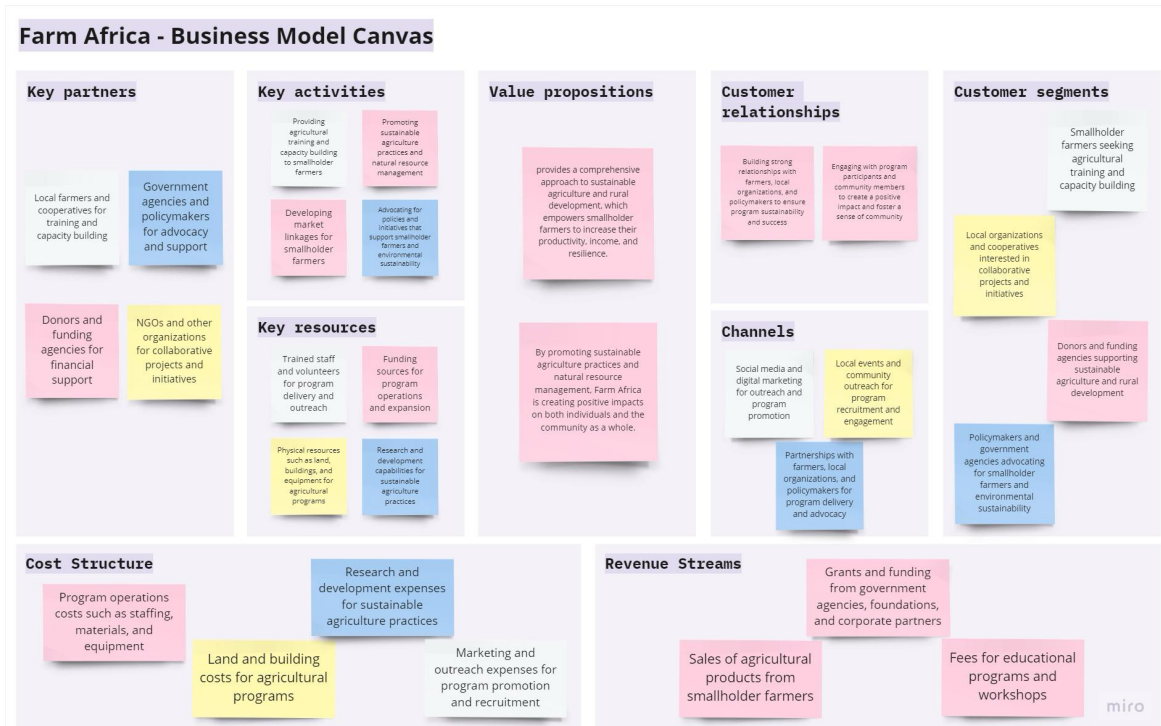


Fig. 3. Farm Africa Business Model

## 5. INITIAL BUSINESS MODEL (BM) – USING BMC & VPC

### 5.1. Initial Business Model Canvas (BMC)

The Fig.4 below shows the initial Business Model of MFarm using the Business Model Canvas (BMC) framework.

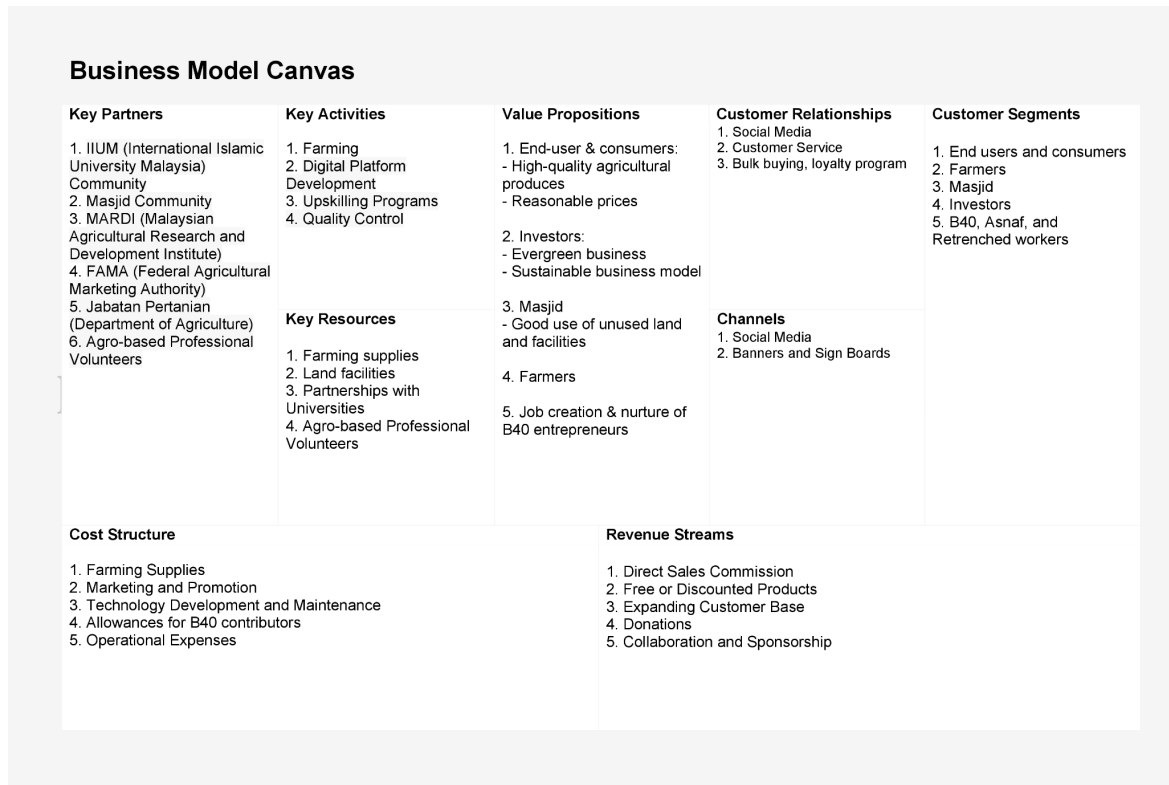


Fig. 4. Business Model Canvas of MFarm

### 5.2. Initial Value Proposition Canvas (VPC)

Table 1: Value Proposition Canvas

Customer Segment	Value Map	Customer Profile
Consumers	<b>Products and Services</b> <ol style="list-style-type: none"> <li>Community-supported farming (CSA) subscriptions</li> <li>Organic or specialty products</li> <li>Fresh and local grown produce</li> </ol> <b>Gain Creators</b> <ol style="list-style-type: none"> <li>Access to fresh, nutritious and safe produce</li> <li>Convenient and personalized experience</li> </ol>	<b>Gains</b> <ol style="list-style-type: none"> <li>Contribute to improved well-being and health</li> <li>Sense of community by establishing meaningful connections in CSA subscriptions</li> </ol> <b>Pains</b> <ol style="list-style-type: none"> <li>Unpredictable price inflation</li> <li>Product uncertainty for regular and new customers</li> <li>Product accessibility</li> </ol>

	<p>Pain Relievers</p> <ol style="list-style-type: none"> <li>1. Ensuring affordable prices by limiting middle man</li> <li>2. Ensuring quality control and consistency</li> <li>3. Convenient and accessible by conducting business in mosques</li> </ol>	<p>Job-to-do</p> <ol style="list-style-type: none"> <li>1. Aligning business routine with sustainable and ethical practices</li> <li>2. Offering competitive pricings and CSA subscriptions to maintain “value for money” image</li> <li>3. Access to fresh, local grown and healthy food</li> </ol>
Masjid Community	<p>Products and Services</p> <ol style="list-style-type: none"> <li>1. Offers CSA shares which allow customers to receive a regular supply of fresh produce throughout the growing season</li> </ol> <p>Gain Creators</p> <ol style="list-style-type: none"> <li>1. High-quality, locally grown produce that is healthy</li> <li>2. Convenient online ordering and home delivery options</li> <li>3. Educational resources on sustainable farming practices and Islamic principles</li> <li>4. Community events and volunteer opportunities that foster a sense of community</li> </ol> <p>Pain Relievers</p> <ol style="list-style-type: none"> <li>1. Lack of access to high-quality and healthy produce</li> <li>2. Inconvenience of shopping for produce in physical stores</li> <li>3. Limited educational resources on sustainable farming practices and Islamic principles</li> <li>4. Limited opportunities for community engagement</li> </ol>	<p>Gains</p> <ol style="list-style-type: none"> <li>1. Access to produces that align with Islamic dietary guidelines</li> <li>2. Opportunities for community engagement through mosque events and activities</li> <li>3. Access to educational resources that promote Islamic values and practices</li> <li>4. Safe and welcoming spaces for prayer, reflection, and worship</li> <li>5. Opportunities to support and contribute to local causes and charities</li> </ol> <p>Pains</p> <ol style="list-style-type: none"> <li>1. Limited opportunities for social and community engagement due to work or family obligations</li> <li>2. Insufficient access to education and resources on farming skills in mosques</li> </ol> <p>Job-to-do</p> <ol style="list-style-type: none"> <li>1. Offer educational resources and classes on farming that aligns with Islamic principle</li> <li>2. Create and maintain a clean and comfortable space among the farming spaces</li> <li>3. Host community events that may ease the maintenance of the farming spaces</li> </ol>
Farmers	<p>Products and Services</p> <ol style="list-style-type: none"> <li>1. Farming supplies including seeds, soil, and fertilizers</li> <li>2. Use of Masjid facilities and land for farming</li> <li>3. Supportive community of</li> </ol>	<p>Gains</p> <ol style="list-style-type: none"> <li>1. Increased productivity and profitability through access to high-quality farming supplies and resources</li> <li>2. Increased access to</li> </ol>

	<p>fellow farmers and volunteers</p> <ol style="list-style-type: none"> <li>4. Access to market and distribution channels</li> </ol> <p>Gain Creators</p> <ol style="list-style-type: none"> <li>1. Access to high-quality farming supplies</li> <li>2. Access to Masjid facilities and land for farming purposes</li> <li>3. Access to a supportive community of fellow farmers and volunteers</li> <li>4. Opportunity to sell produce at reasonable prices</li> </ol> <p>Pain Relievers</p> <ol style="list-style-type: none"> <li>1. Affordable farming supplies</li> <li>2. Access to land for farming</li> <li>3. Support and training for sustainable and organic farming practices</li> <li>4. Assistance with marketing and distribution of produce</li> </ol>	<p>markets and distribution channels through partnership with Masjid and other organizations</p> <ol style="list-style-type: none"> <li>3. Enhanced knowledge and skills in sustainable and organic farming practices through training and support</li> <li>4. Opportunities to network and collaborate with other farmers and volunteers in the community</li> </ol> <p>Pains</p> <ol style="list-style-type: none"> <li>1. Limited access to high-quality farming supplies</li> <li>2. Lack of available land for farming</li> <li>3. Limited marketing and distribution channels</li> <li>4. Limited knowledge and skills in sustainable and organic farming practices</li> </ol> <p>Job-to-do</p> <ol style="list-style-type: none"> <li>1. Grow high-quality produce for sale</li> <li>2. Manage farming activities and resources effectively and efficiently</li> <li>3. Market and distribute produce to local communities and businesses</li> <li>4. Participate in training and support programs to enhance farming skills and knowledge</li> </ol>
<p>B40, Asnaf and Retrenched Workers</p>	<p>Products and Services</p> <ol style="list-style-type: none"> <li>1. Entrepreneurship training</li> <li>2. Trusted digital platform</li> </ol> <p>Gain Creators</p> <ol style="list-style-type: none"> <li>1. Employment and future entrepreneurs</li> <li>2. Train and upskill to be entrepreneurs</li> <li>3. Agricultural training and education to increase the productivity</li> </ol> <p>Pain Relievers</p> <ol style="list-style-type: none"> <li>1. Jobs creation</li> <li>2. Provide upskilling training for new farmers</li> <li>3. Provide market access and marketing support</li> </ol>	<p>Gains</p> <ol style="list-style-type: none"> <li>1. Have skills and knowledge on how to be entrepreneurs</li> <li>2. Improve quality of living</li> <li>3. Bring communities together and promote social cohesion</li> <li>4. Better health outcomes for the community</li> </ol> <p>Pains</p> <ol style="list-style-type: none"> <li>1. Jobless</li> <li>2. Living cost increasing</li> <li>3. Lack of skills</li> <li>4. Unemployed</li> </ol> <p>Job-to-do</p> <ol style="list-style-type: none"> <li>1. Choose appropriate</li> </ol>

	<p>4. Provide community support such as community engagement initiatives</p>	<p>seeds, plant at the right time and ensure they are spaced and fertilized</p> <ol style="list-style-type: none"> <li>2. Managing pests and diseases, weeding and ensure the crops are healthy</li> <li>3. Harvest the crops at the right time and processing them for sale</li> <li>4. Develop a marketing and sales plan to sell the crops</li> <li>5. Engaging with local community and promote the benefits of farming</li> </ol>
<p>Donors</p>	<p>Products and Services</p> <ol style="list-style-type: none"> <li>1. Farming Supplies including seeds, soil and fertilizers</li> <li>2. Agricultural technology including irrigation system and tools</li> </ol> <p>Gain Creators</p> <ol style="list-style-type: none"> <li>1. Access to essential product by being involved in a fundamental industry</li> <li>2. Physical and measurable assets provide security to donors</li> </ol> <p>Pain Relievers</p> <ol style="list-style-type: none"> <li>1. Risk management such as crop insurances</li> <li>2. Managing resources efficiently by implementing latest farming practices</li> <li>3. Support and training for sustainable and organic farming practices</li> </ol>	<p>Gains</p> <ol style="list-style-type: none"> <li>1. Stable return of investment</li> <li>2. Tangible assets</li> </ol> <p>Pains</p> <ol style="list-style-type: none"> <li>1. Weather and climate changes</li> <li>2. Rising costs for essential farming resource input</li> <li>3. Limited knowledge and skills in sustainable and organic farming practices</li> </ol> <p>Job-to-do</p> <ol style="list-style-type: none"> <li>1. Grow high quality produce for sale</li> <li>2. Diversify product range</li> <li>3. Increase yield production efficiently</li> </ol>

## 6. CONDUCT VALIDATION OF INITIAL BM & KEY FINDINGS

An online survey with only 8 questions was distributed through social media to validate our business model, and 32 responses were received, including 18 students, 10 employed workers, and only 4 unemployed workers. The summary of responses are as follows:

### WHAT IS YOUR CURRENT STATUS OF EMPLOYMENT?

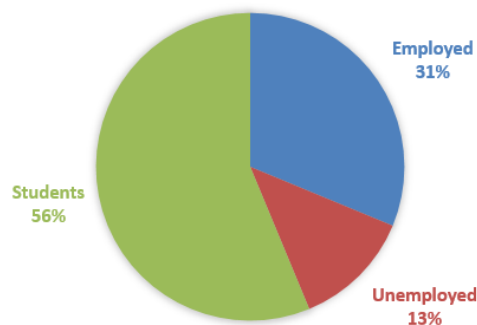


Fig. 5. Question 1

The first question asked users about their employment status. As shown in Fig. 5, 56% or 18 of the respondents are students. 31% or 10 respondents are employed while 13% or 4 respondents are unemployed.

### HOW FREQUENT DO YOU CONSUME FRUITS AND VEGETABLES ON A WEEKLY BASIS?

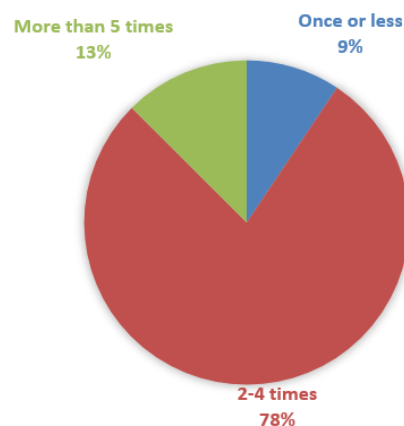


Fig. 6. Question 2

In the second question, we asked respondents how often they eat fruits and vegetables on a weekly basis. As shown in Fig. 6, 78% of respondents consume fruits and vegetables 2-

4 times per week. 13% consume more than 5 times per week, while 9% consume once or less per week.

**IF YOU ARE TO BE ONE OF OUR CUSTOMERS IN THE FUTURE, WHICH CUSTOMER SEGMENT WOULD YOU BE?**

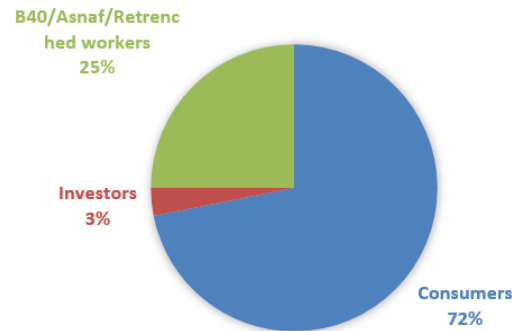


Fig. 7. Question 3

The following question we posed to respondents was which type of customer segment they would prefer to be in the future. As shown in Fig. 7, 72% are consumers. 25% are B40/Asnaf/Retrenched workers. While 3% are investors.

**HAVE YOU EVER MET ANY SMART FARMING BUSINESS THAT IS SIMILAR TO OUR MFARM BUSINESS?**

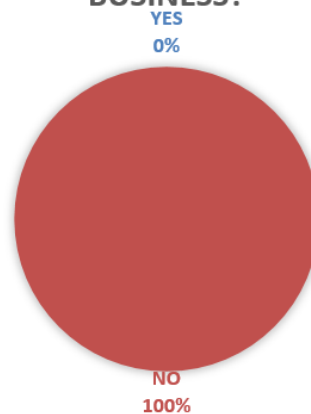


Fig. 8. Question 4

In addition, we asked respondents if they had ever met a business similar to our MFarm. As shown in Fig.8, 100% said 'No,'.

**WHAT DO YOU THINK IS THE ADVANTAGE OF USING MASJID AS PLATFORM FOR SMART FARMING?**

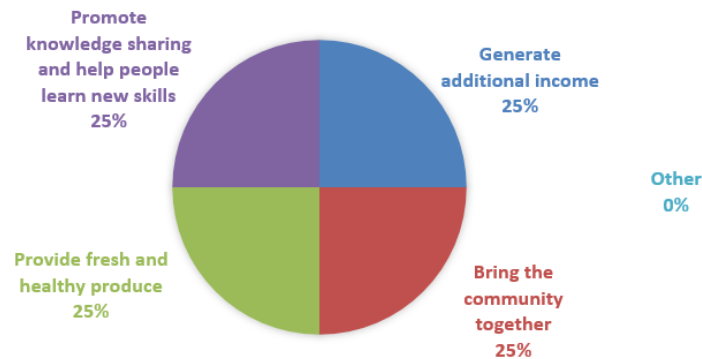


Fig. 9. Question 6

Next, we asked respondents about the benefits of using a mosque as a platform for smart farming. We prepared four answers for them to check if they agree with them, and they can add more on Others. As shown in Fig. 9, the four prepared answers received 25% each, indicating that all of the respondents agree with the answers as the benefits of smart farming at the mosque and there is no additional answer.

**WHAT DO YOU THINK IS THE DISADVANTAGE OF USING MASJID AS PLATFORM FOR SMART FARMING?**

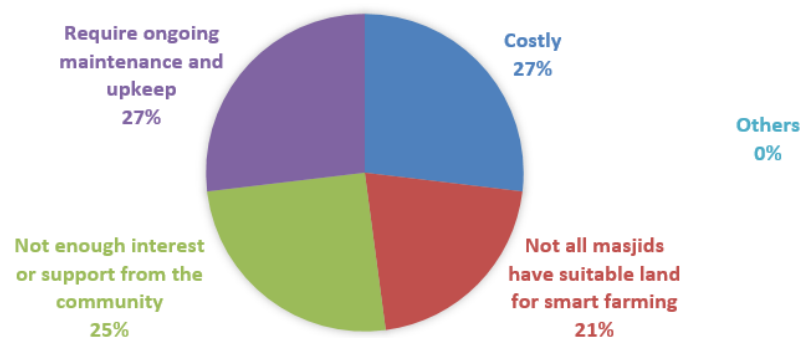


Fig.10. Question 7

Furthermore, we asked respondents about the disadvantages of using a mosque as a smart platform. We prepared four answers for them to check if they agree, and they can add more answers on Others. As shown in Fig. 10, 'Costly' and 'Require ongoing maintenance and upkeep' received 27% each, with 32 respondents agreeing. 'Not enough community interest or support' received 25%



with a total of 30 respondents, while 'Not all mosques have suitable land for smart farming' received 21% with 26 respondents.

### WHAT ARE YOUR CONCERN(S) WHEN BUYING FROM SMART FARMING?

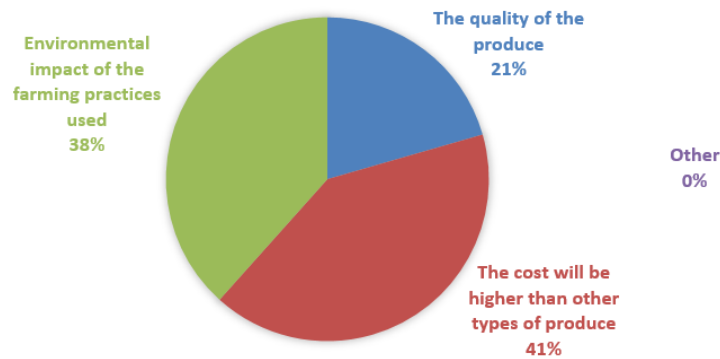


Fig. 11. Question 8

Finally, we asked respondents what their main concerns are when purchasing from smart farming. As shown in Fig. 11, 41% of respondents are concerned that the cost will be higher than for other types of produce. 38% are concerned about the impact of farming practices on the environment. Meanwhile, 21% are concerned about the quality of the produce.

## 7. VALIDATED BM – BMC FRAMEWORK

### 7.1. Validated Business Model

The Business Model Canvas (BMC) framework is employed for presenting the MFarm business model that has been validated. The following is a description of each of the nine BMC blocks that represent the conceptual business model of MFarm:

- a. *Value Proposition (VP)*: The value proposition outlines the benefits that this business concept offers to different customer segments. For end-users and consumers, high-quality agricultural produce at reasonable prices is the main value proposition. Investors are attracted to the evergreen and sustainable business model, while the mosque benefits from the good use of unused land and facilities. For farmers, the value propositions are (i) up-skilling, job creation and nurturing of B40 agro-preneurs, and (ii) trusted MFarm digital platform for selling of their fresh agro-based products directly to consumers - individual and business buyers like restaurants and mini- & super-markets.
- b. *Customer Segments (CS)*: The customer segments identified for this business concept include end-users and consumers. These are the individuals and families who will purchase and consume the agricultural produce grown in the mosque's farming space. Farmers are individuals who will be employed by the agro-based businesses to help with the farming activities. They are interested in job creation, nurtured and empowered the

- B40s as agropreneurs. The mosque is also considered a customer segment, as it will provide the land and facilities for the farming activities. The mosque is interested in the good use of unused land and facilities. Investors are individuals or organizations that are interested in investing in the business. They are attracted to the evergreen and sustainable business model. B40, Asnaf, and Retrenched Workers are also considered as a customer segment, as they will benefit from the job creation and training opportunities and free up-skilling training opportunities as agropreneurs.
- c. *Channels (CH)*: Channels are the ways through which the business promotes and communicates its products/services to its various CS. In this business model, the channels identified include social media, MFarm digital platform/apps, banners/signboards/flyers, and mosque. Social Media is important in reaching out to customers and stakeholders through platforms like Facebook, Twitter, and Instagram. Social media can be used to promote the benefits of using mosque spaces for farming, share updates on farm produce, and engage with customers and stakeholders. The business can also use social media to respond to queries and concerns from customers and stakeholders. Banners can be placed in the mosque compound or other areas where the business is located. These banners and sign boards should contain information about the business, its products, and services.
  - d. *Customer Relationships (CR)*: Customer relationships are the ways a business like MFarm interacts with its various customer segments in building and sustaining a long-term relationship with them. MFarm wants to make sure its various customer segments are happy with the products and services they offer. To do this, MFarm can use different strategies for different customer segments. For end users and consumers, they can use social media to talk to customers and give them good service and start a loyalty program to encourage customers to keep buying from MFarm. MFarm can work closely with farmers to help them sell their produce and improve their farming practices. Besides, they can work with the mosque community to make use of their land and facilities, and keep in touch with them. For investors, they can keep them informed about how the business is doing. For B40, Asnaf and Retrenched workers, MFarm can offer job opportunities and free up-skilling training programs, and provide products and services that meet their needs.
  - e. *Revenue Streams (RS)*: Similar to platforms like FoodPanda and AirBnB, MFarm is a digital platform or app that links consumers and farmers. With no need for intermediaries and fair prices for both parties, it enables farmers to sell their agricultural products directly to end users. In order to make profits and encourage social responsibility, MFarm can sell some products for more money to cover costs and make a profit while also giving some of the products away for free or at a discount to underserved communities like B40, Asnaf, and retrenched workers. Additionally, expanding the customer base is a benefit of selling products at lower prices. In order to fund its operations, MFarm may accept financial gifts and donations. It may also collaborate with companies or organizations to promote its brand, form enduring relationships, and achieve its mission.
  - f. *Key Partners (KP)*: Important collaborators in this business venture include the IIUM (International Islamic University Malaysia) community, the masjid

- community, MARDI (Malaysian Agricultural Research and Development Institute), FAMA (Federal Agricultural Marketing Authority), Jabatan Pertanian (Department of Agriculture), and the masjid community. By promoting the products to their people and the larger community, the masjid community can support the business while also providing the land and facilities needed for farming operations. MARDI, FAMA, and Jabatan Pertanian can provide technical assistance, knowledge, and advice regarding farming methods to raise agricultural productivity and product quality. FAMA can also help with marketing and distribution, making it easier to reach bigger markets. The IIUM community can offer a venue for companies to advertise their products and services, interact with potential clients, and get farming-related technical support.
- g. *Key Activities (KA)*: The key activities of MFarm encompass farming, digital platform development, upskilling programs, and quality control. Farming involves cultivating crops on unused land provided by the masjid community. The development and enhancement of the MFarm digital platform/app aim to improve user experience, incorporate new features, and facilitate efficient interactions between farmers and consumers. Upskilling programs empower marginalized groups like B40, Asnaf, and retrenched workers through training in agriculture, entrepreneurship, and sustainable farming. Regular quality checks ensure high-quality, fresh, and chemical-free agricultural products, building customer trust and sustaining sales. These activities collectively contribute to MFarm's mission of connecting farmers with consumers, promoting sustainable practices, and empowering marginalized communities.
  - h. *Key Resources (KR)*: The key resources for this business venture include farming supplies, such as equipment and tools necessary for efficient crop farming. These resources are essential for assure successful farming operations with minimal wastage. The masjid community serves as a crucial partner, providing unused land and facilities that contribute to the business's success by enabling efficient farming and maintaining product quality. Additionally, partnering with local universities or colleges allows for the provision of internships or training programs to students interested in farming and becoming agro-preneurs. This collaboration provides access to skilled individuals who can contribute to various aspects of the business. Furthermore, the involvement of agro-based professional volunteers can further support farming operations and provide assistance in other areas, bolstering the resources available to MFarm.
  - i. *Cost Structure*: The cost structure of MFarm, as a digital platform/app, is carefully managed to ensure the provision of high-quality agricultural produce at reasonable prices, while maintaining a sustainable business model that benefits its key partners and customer segments. While MFarm itself does not directly incur costs related to farming supplies such as seeds, soil, and fertilizers, it supports its partner farmers in acquiring these resources efficiently and cost-effectively. The business allocates funds for providing financial support and allowances to B40 entrepreneurs, as part of its mission to nurture and empower marginalized communities. By carefully monitoring these costs, MFarm aims to balance affordability, sustainability,

and support for its key partners and customer segments in the agricultural ecosystem.

## 7.2. Environmental Map

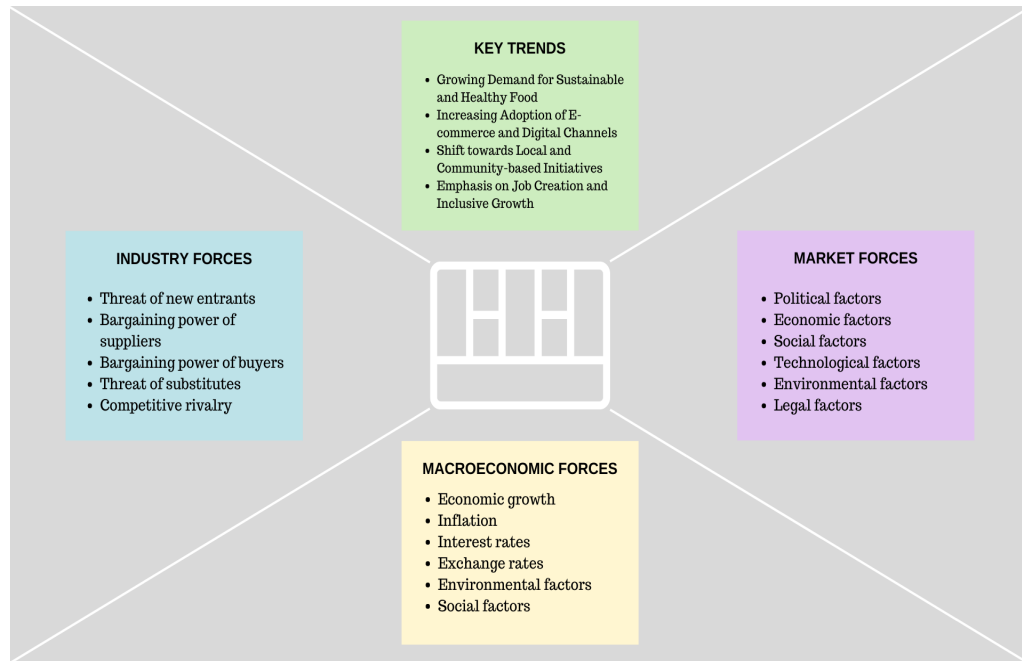


Fig.12. Environmental Map

### 7.2.1. Market Forces

#### a. Political Factors

Government policies and regulations on farming subsidies and taxes can impact the business's cost structure and revenue streams.

#### b. Economic Factors

The economic growth rate, inflation and consumer demand for fresh produce can affect the business's revenue streams and pricing strategies.

#### c. Social Factors

Consumer preferences for healthy, locally-sourced produce, and interest in supporting community driven initiatives can influence the business's value propositions and customer segments.

#### d. Technological Factors

Advancements in agricultural technology and sustainable farming practices can impact the business's key activities and resources.

#### e. Environmental Factors

Climate change, natural disaster, and water scarcity can affect the business's farming operations, key resources and cost structure.

#### f. Legal Factors

Laws and regulations related to food safety, labour laws, and property rights can impact the business's operations and cost structure.

### **7.2.2. Industry Forces**

#### **a. Threat of new entrants**

The threat of new entrants may be low due to high capital requirements, specialised knowledge, and existing brand loyalty of established competitors.

#### **b. Bargaining power of suppliers**

The business may face challenges in managing power of suppliers for farming supplies such as seeds, fertilisers, soil and other equipment.

#### **c. Bargaining power of buyers**

The bargaining power of buyers may be high due to the availability of other suppliers and substitutes.

#### **d. Threat of substitutes**

The threat of substitutes may be high due to the availability of other food sources and other suppliers.

#### **e. Competitive rivalry**

The competitive rivalry may be high due to the presence of established competitors with similar value propositions, customer segments, and marketing channels.

### **7.2.3. Key Trends**

#### **a. Growing Demand for Sustainable and Healthy Food**

Sustainable and healthy food options are becoming more popular among consumers. The company now has the chance to meet this demand and provide premium agricultural products that are grown in accordance with sustainable practices.

#### **b. Increasing Adoption of E-commerce and Digital Channels**

It is crucial for the business to take advantage of e-commerce and digital channels given the increasing adoption in order to expand the number of consumers and boost sales.

#### **c. Shift towards Local and Community-based Initiatives**

Consumers' interest in promoting regional and community-based causes is growing, which gives businesses a chance to engage with the environment and cultivate a loyal customer base.

#### **d. Emphasis on Job Creation and Inclusive Growth**

Governments and businesses alike are beginning to place a high priority on inclusive growth and job creation. The business can support local stakeholders while also fostering B40 entrepreneurs and contributing to the economic growth of the neighbourhood.

#### **7.2.4. Macroeconomic Forces**

##### **a. Economic growth**

Demand for agricultural goods is impacted by economic growth. People tend to purchase more agricultural goods when the economy is expanding because they have more disposable income. On the other hand, if the economy is weak, people might make fewer purchases, which would have an impact on the business's revenue streams.

##### **b. Inflation**

The price of agriculturally essential supplies and resources, such as soil, seeds, and fertilisers, is impacted by inflation. The cost of production rises with inflation, which may have an impact on the business's cost structure and pricing policies.

##### **c. Interest rates**

Interest rates influence the cost of obtaining them and, consequently, the cost structure of the business. Since obtaining financing to invest in the business costs more when interest rates are high, profitability is impacted. As a result, profitability rises when interest rates are low and borrowing costs fall.

##### **d. Exchange rates**

If the business imports any of its supplies, exchange rate changes may have an impact on its profitability. Changes in exchange rates could make importing supplies more expensive, which would impact the business's cost structure and pricing guidelines.

##### **e. Environmental factors**

The operations and production capacity of the business may be impacted by changes in the climate, the weather, or natural disasters. For instance, crop yields may be impacted by droughts or floods, raising production costs and impacting revenue streams.

##### **f. Social factors**

The demand for agricultural products can be impacted by social factors such as dietary preferences, cultural attitudes, and health trends. The business should be conversant of these developments and modify its value proposition and marketing plans accordingly.

#### **7.3. Strategy Canvas**

In order to better understand the positioning of MFarm business model in the farming industry, a strategic canvas has been developed comparing it with other companies. This canvas provides a visual representation of the key factors that differentiate this business from its competitors and highlights the areas where it excels and where it could improve. Refer to Fig. 13 below to gain insights into the unique value proposition of this business, which are mainly the mosque's underutilized land space optimization and opportunity of jobs with free reskilling, and how it stands out from other companies in the market.

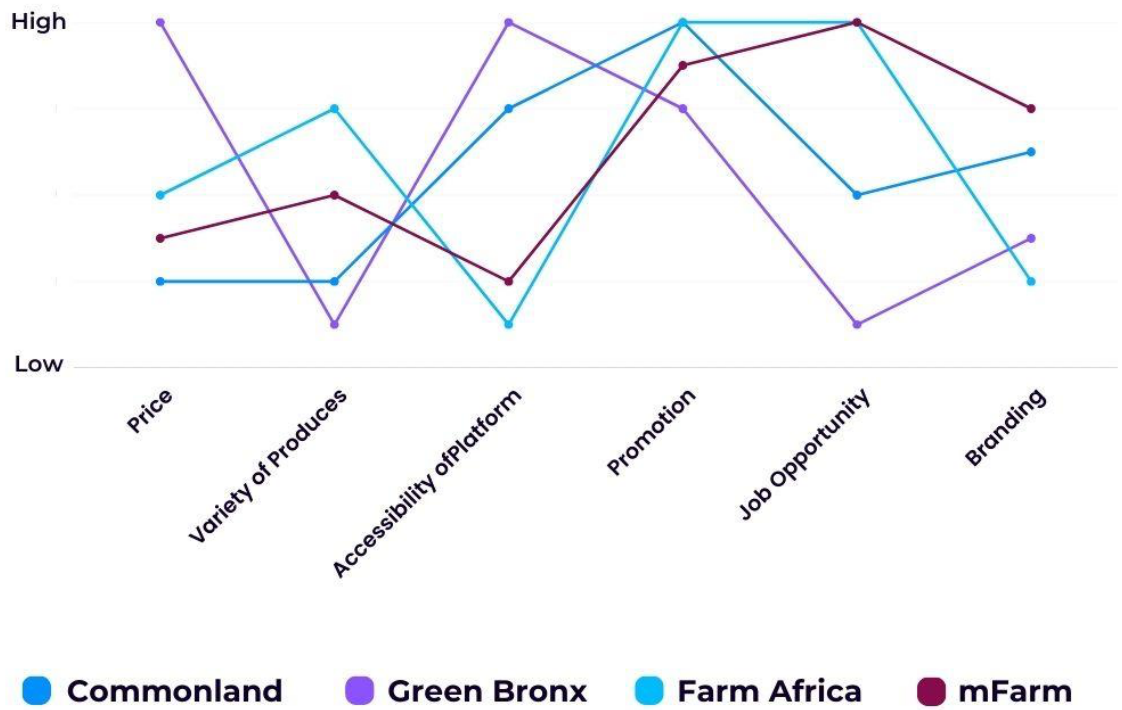


Fig. 13. Strategic canvas between three benchmark companies.

#### 7.4. Low Fidelity prototype apps

Fig. 14 illustrates the low fidelity prototype apps that were developed in the initial stages of the design process. These prototypes allowed for quick iterations and user testing of the basic functionalities and layout of the application.

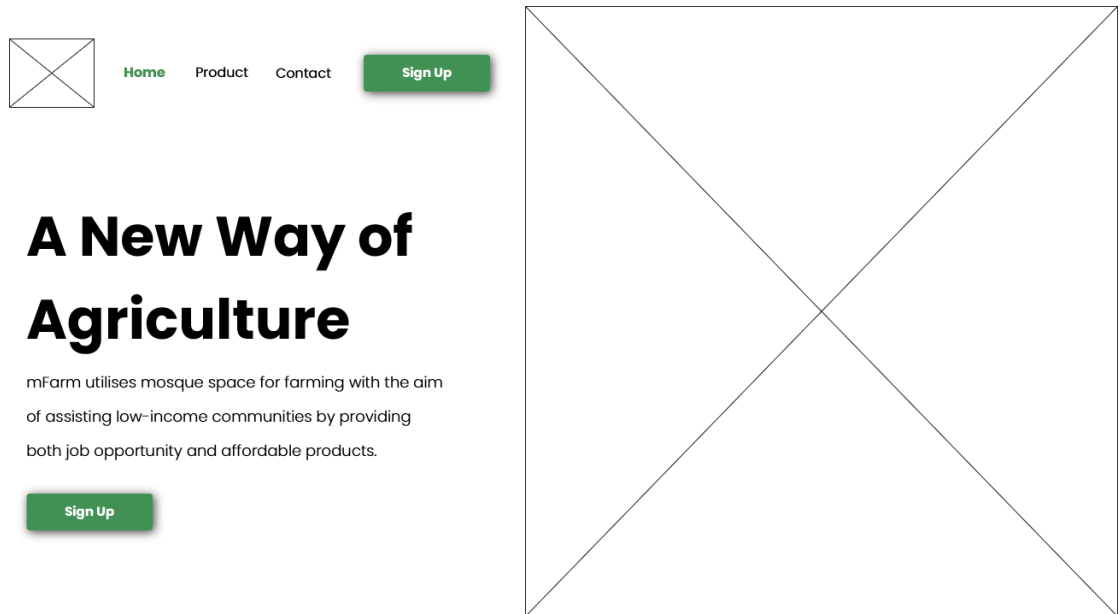
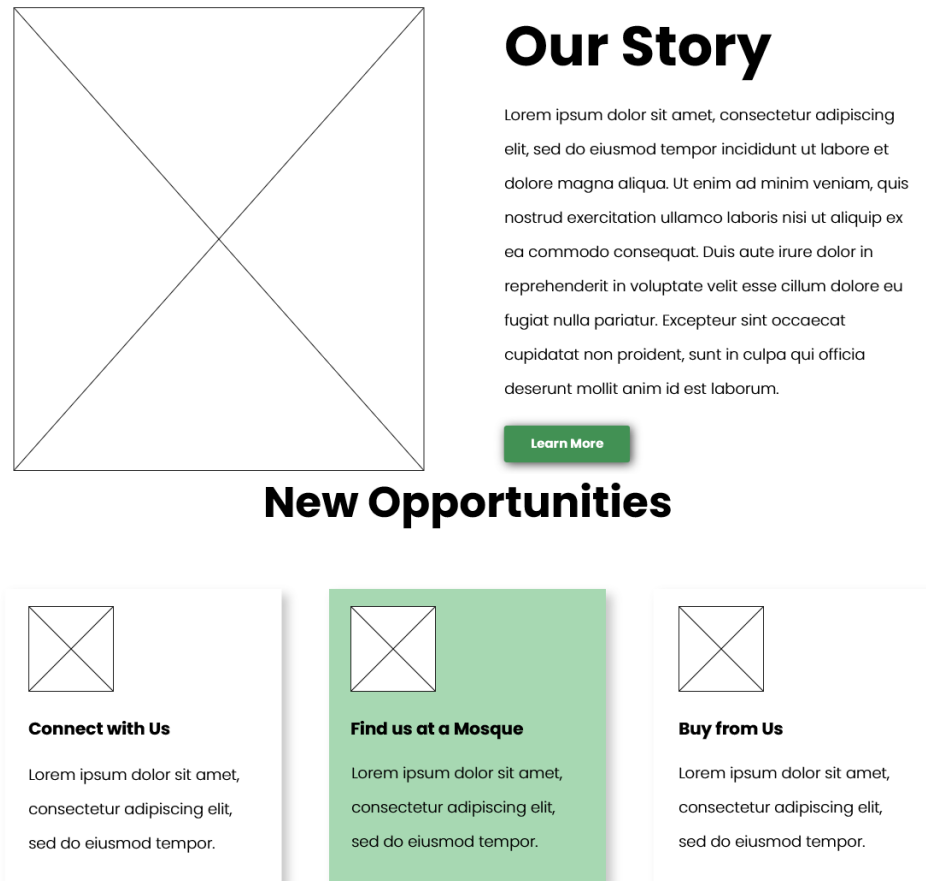


Fig. 14. Low fidelity prototype for home screen of MFarm web application.





**Connected with more than 500 mosques around Malaysia**

Fig. 15. Low fidelity prototype for a page in MFarm web application to explain the business and its services.

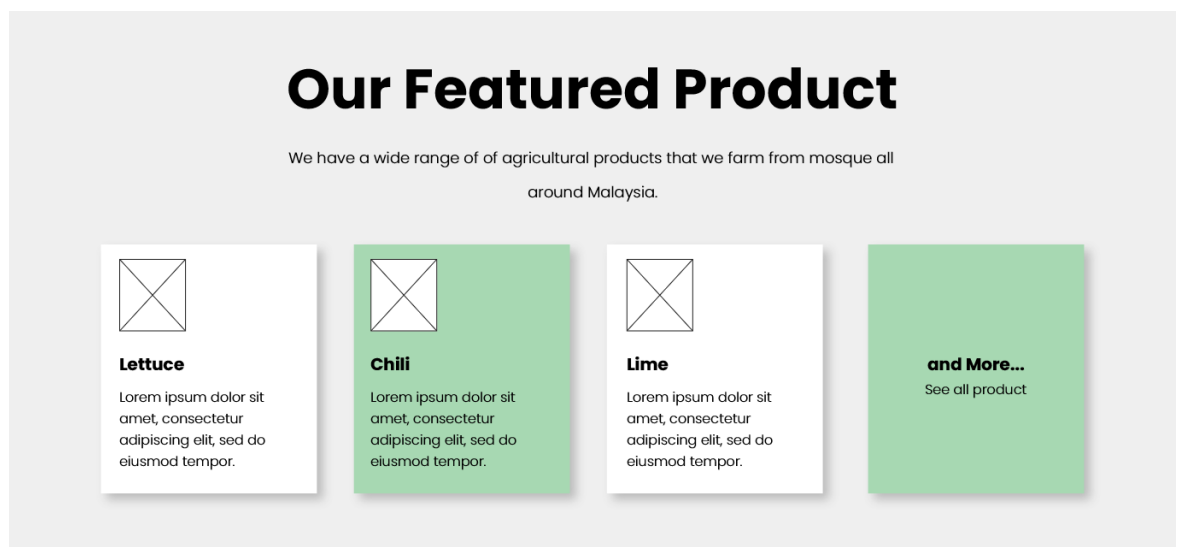


Fig. 16. Low fidelity prototype for a page in MFarm web application to describe products accessibility and availability.

## 8. CONCLUSION AND FUTURE WORKS

As a conclusion, the concept of utilising mosques as farming centres presents a unique opportunity to promote sustainable food production and provide a source of fresh, locally-sourced produce to the mosque community and surrounding areas. One of the key challenges is managing the limited space available in mosques and ensuring that efficient farming practices are used to maximise productivity. Another challenge is building awareness and trust among the mosque community and wider society, especially given the sensitivity around food production in religious spaces. Additionally, addressing the extreme pain points of the mosque community, such as limited access to fresh and healthy food options and high food waste, should be a priority. However, the essential gains of this business, such as providing fresh and healthy produce to the community, promoting sustainable farming practices, and supporting low-income communities, make it a valuable proposition. Key differentiators of this business include its use of mosque as a farming centre which simultaneously forges opportunity for nearby communities to do social events that can create a long-term relationship between customers. Moreover, with B40s, the Asnafs and low-income communities in mind, providing upskilling training for these people can nurture them into becoming agropreneurs.

However, to fully realise the potential of this business concept, future works need to be done. Ongoing efforts need to be made to ensure the sustainability and scalability of this business. This can include investing in research to develop a comprehensive business plan, building partnerships with nearby communities and suppliers, and establishing reliable and efficient farming technologies and streamline operations, as well as partnering with other organisations to expand the reach and impact of the business. Additionally, efforts need to be made to increase awareness of this unique business concept and its benefits to the community. This can be done through targeted marketing and community engagement initiatives, such as collaborating with local organisations and influencers to promote the concept and its value proposition. Finally, one important area is to develop a mobile application that allows for easy accessibility and ordering of products. A mobile application can provide customers with an easy and convenient way to order food and track delivery, and can also allow for personalised recommendations and promotions. Developing a user-friendly and functional mobile application will be critical in attracting and retaining customers.

Some other works that can be considered and implemented are by conducting comprehensive research to develop a detailed business plan that covers various aspects, including market analysis, competitive landscape, financial projections, operational logistics, and legal requirements. This research will provide a strong foundation for decision-making and help identify potential challenges and opportunities. One other crucial step for the future is to establish strategic partnerships by collaborating with nearby communities, local farmers, suppliers, and agricultural experts to build strong partnerships. These partnerships can enhance the availability of resources, knowledge sharing, and support network, contributing to the scalability and sustainability of the business. Lastly, there is potential in developing a targeted marketing strategy to create awareness and generate interest in the business. Utilize various channels such as social media, local publications, and collaborations with influencers or relevant organizations to promote the concept and its unique value proposition. Emphasize the quality,

freshness, and locally-sourced nature of the produce. In summary, while there is much work to be done, the concept of utilising mosques as farming centres presents an exciting and innovative opportunity to promote sustainable food production and provide a valuable service to the community.

## **ACKNOWLEDGEMENT**

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