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Research Article

Adoption of Organic Farming in the United Arab Emirates (UAE) as a Global Approach to Benefit from the Sustainability of Nature

Mohammad Mutarad Al-Oun*, Khaled Michel Hazzouri and Hazel Barrett

Khalifa Center for Genetic Engineering and Biotechnology, United Arab Emirates University (UAEU), Al Ain, Abu Dhabi, United Arab Emirates

***Corresponding Author:** Mohammad Mutarad Al-Oun, Khalifa Center for Genetic Engineering and Biotechnology, United Arab Emirates University (UAEU), Al Ain, Abu Dhabi, United Arab Emirates.

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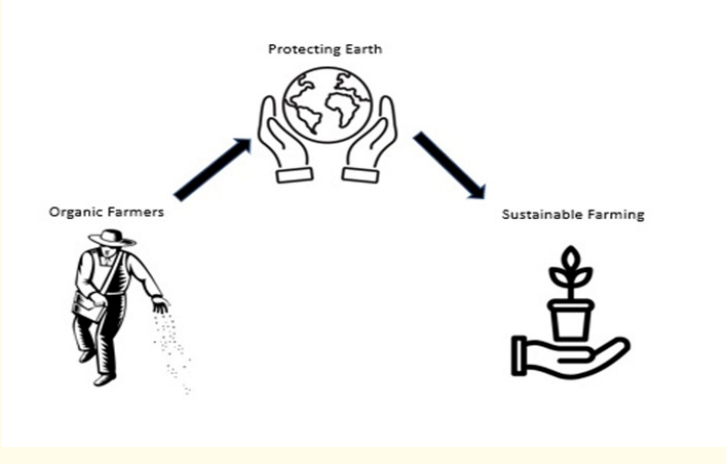
Abstract

The research methodology for this study involves phenomenological research for the study of the growth of organic farming in the UAE and its impact on the environment and economy. The main objective is to assess policies, standards, and programs that aid farmers in transitioning to organic agriculture while overcoming major barriers. Data were collected from organic farmers through a semi-structured interview approach to gain insights in terms of the practices that they perform, their perception toward them, and the corresponding barriers to adoption. The outcomes of the thematic analysis provided important trends such as the profitability of alternative farming systems, approaches to transition from conventional to organic farming, and coping strategies for dealing with issues. Results opened a positive outlook towards organic farming due to its positive influence on soil health and the environment. Applications were, however, constrained by high start-up costs, resistance and lack of support from conventional farmers, and lack of appropriate policies, education and support systems. Finally, the study recommends strengthening institutional support and policies to facilitate the development of the organic farming future in the UAE.



Keywords: Organic Farming; United Arab Emirates (UAE); Sustainability of Nature; Eco-Friendly Practices

Introduction

Organic farming certified is experiencing a significant increase in its growth in global land area, rising number of producers, increased market share, and universal acceptance [1]. The recent Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agriculture Movements (IFOAM) Organics International Statistics Book revealed compelling statistics: 188 countries currently practice organic farming, 77 of which are completely regulated for organic production. The aggregate organic area spans 96.4 million hectares, constituting 2% of the global agricultural landscape, and is supported by 4.5 million organic producers [2]. The market value is USD 143.84 billion and an additional 34.6 million hectares are allocated for organic wild collection and non-agricultural purposes [3]. Furthermore, organic farming is increasingly acknowledged by international organisations and nations as a sustainable agricultural approach, significantly contributing to food security and global environmental preservation [4]. For instance, FAO has supported the practice of organic farming since 1999 and has put forward many programs and policies to promote it. In the view of FAO and Agriculture Organization 'Organic farming is a multi-billion dollar industry and the effective combination of modern scientific progress together with the age-old traditional farming skills it has phenomenal potential for contributing to the change from low-input high external input subsistence farming to new and improved higher input systems efficient in their use of external inputs sustainable in their impact on the environment [5]. Also in the same year, the European Commission has set the target that at least 25% of the EU agricultural land should be organic by 2030 and a large increase of the organic aquaculture. These have been formulated in the United States of America (USA) as enhanced policies and programmes. One was from March 2024, in which the United States Department of Agriculture (USDA) underwent a revision on the regulation of organic farming to improve the supervision and enforcing the production, handling and distribution of organic agriculture products, and in which several changes were made [6]. These amendments are intended to protect the integrity of the organic product distribution system, increase consumer and industry trust in the organic label of USDA, and strengthen organic management systems. These include enhanced trackability from farm to market coupled with uncompromised compliance with the organic regulations of USDA.

Literature Review

Organic farming in the United Arab Emirates

A notable increase has been observed in approved organic farming in the United Arab Emirates (UAE), which is characterised by substantial regulatory development, expansion of farming areas, diversification of certified organic food types, and enhanced market presence. According to a recent survey conducted by Statista (2023), the certified organic farming area exceeded 4,867 hectares in 2018 [7]. This represents a notable growth of 3.85% in the organic farming area compared to the previous year. This growth is supported by the fact that the country has more than 70 different types of certified organic crops, highlighting the UAE's commitment to ecological and sustainable farming practices. Moreover, organic farming practices in the UAE, including animal farming for meat and milk products, along with more than 150 certified operational farms (Table 1), indicate a marked transformation in the approaches to sustainable farming management.

Despite insufficient comprehensive market data, the Gulf Cooperation Council (GCC) countries are witnessing a notable organic movement and huge demand for organic food items, For example, the UAE's food and beverage market was estimated to reach more than USD 373 million by 2021. According to a recent book released by FiBL and IFOAM in 2024 [4], the certified organic farming area exceeded 5,000 ha by 2022 (Table 1) compared with 4,867 ha in 2018. This represents a substantial growth of 11% compared with the numbers recorded in these years. This is supported by the fact that the UAE has more than 70 different types of locally certified organic crop varieties, indicating an ecological and farming-oriented focus. Organic farming in the UAE, comprising animal farming for meat and milk products alongside approximately 150 operational farms, highlights a marked transformation in the agribusiness and environmental management approaches of the country [4]. The UAE and the Kingdom of Saudi Arabia (KSA) have the largest areas of organic farming, producers, sales, and exports. The organic farming area in the UAE is more than 5,000 ha, constituting 1.4% of the agricultural area, with more than 150 organic operators. Organic exports are estimated to be more than 500 metric tons. This growth can be attributed to both countries' implementation of robust support frameworks for their organic farming sectors. This framework encompasses various dimensions, including legal, certification, inspection, extension services, supervision, technical assistance, and logistics.

Many awareness-raising activities for organic farming have been conducted throughout the UAE to ensure the wide adoption of organic farming. These strategies aim to involve not only the organic farmers and operators but also the local business people, residents as well and visitors. This is a complex strategy of analysis that covers all activities from organic food production to the consumer [8]. It comprises interest generation campaigns, human resource development programs, awareness resulting from studies, education and communication programs, market development, endearing existing conventional business ties, and setting up of supply contractual agreements with farmers and retailers to open separate quotas of organic products in the IGA stores. Also, this approach helps to follow the safety measures in its strict sense of creating monitoring and evaluation mechanisms. The desire is to make models that would encourage people to take up organic farming around the country [8].

The coordination of the UAE's MOCCAE and other organisations has been pivotal to the success of organic farming in the country [9]. In its work within the framework of this cooperation, the group defined a goal to outline the key strengths and weaknesses of organic farming systems across the territory of the given country. UAE seeks to safeguard the consumers' interest in 100% organic products and promote and regulate fair competition through rigorous standards and policy formation. Some of these regulations are internationally benchmarked and span across settings such as crop growing, animal husbandry, labelling, and trading [10]. It empowers organic farming and makes the sector stronger and more united. These are the major activities that have improved the image of this sector across the world.

UAE regulation of organic farming

The UAE government is aware that organic farming regulations are essential to ensure that its organic farming approach complies with international regulations and standards. This will also ensure that customers are not cheated to control unfair competition for fake goods in the market and ascertain that organic products and inputs are authentic. The UAE has established firm rules for all organic production industries to comply with international quality and food safety standards completely [8]. These rules encompass crops, animals, inspections, labels, processing, marketing, imports, and exports. Federal Law No. 5 of 2009, Ministerial Decisions 84 of 2012, and Decision No. 768 of 2014 are some of the most important rules [11]. The UAE has developed organic farming regulations that meet international standards.

The UAE established comprehensive legislation governing organic farming practices, beginning with Federal Law No. 5 of 2009 for organic inputs and products. The law comprises 16 articles delineating the general principles for regulating organic farming, including the definitions and role of the MOCCAE in overseeing inputs and products [9]. Following this law, Ministerial Decisions No. 84 of 2012 regarding the Executive By-Law of Federal Law No. 5 was issued in 2009 to provide detailed guidelines for organic production [1]. This decision, comprising 33 articles, serves as the major guideline for stakeholders, including food control and certification bodies, and outlines the principles for operators transitioning to organic farming. It was developed based on various organic farming regulations, including those of the EU, USDA-National Organic Program (NOP), Codex Alimentarius, and IFOAM [11].

Recognising the necessity of a legal inspection and certification system for local produce to develop the organic farming sector, the UAE issued the Emirates Organic Foods Certification Scheme through Resolution No. 6 of 2012 [8]. Under this scheme, the Emirates Authority for Standardisation and Metrology (ESMA), later under the umbrella of the Ministry of Industry and Advanced Technology (MOIAT), functions as the national authority responsible for inspection and certification. Its certification scheme covers six categories: 1) fresh, chilled, and frozen fruits and vegetables; 2) canned food products; 3) fresh and canned juices; 4) meat and fish; 5) eggs; and 6) milk, dairy, and cheese. However, the MOIAT accredited private companies to operate on their behalf when implementing this scheme.

Additionally, Ministerial Decision No. 103 of 2012 introduced the UAE organic logo, a distinctive mark for certified organic inputs and products. Registered under the Ministry of Economy, this logo must be used by Federal Law No. 5 of 2009 and its executive bylaw on organic inputs and products. Widely adopted by farmers and organic operators, the logo enables consumers to recognise organic products of the UAE [12].

Regarding imports, the MOCCAE issued Ministerial Decision No. 768 of 2014 to regulate the import and circulation of organic food products. Based on this decision, ten organic farming regulations and standards equivalent to the UAE regulations were identified [1]. Products that comply with these regulations and standards are allowed to enter the UAE market, provided that supporting documents are submitted.

Promotion and certification

Organic operations promotion and certification in the UAE also consists of the training and awareness programs by the MOCCAE which has also created an extension website on 'My Sustainable Farm' that covers any aspect concerning organic farming [1]. The programmes are similar to those indicated by international programmes in organic farming which include farm conversion, crop and land management, pest and disease management, recycling and marketing programmes [5]. To facilitate these programmes the farmers are forced to participate in events and exhibitions about their profession. Furthermore, there are recommendations and measures input to help farmers achieve the objectives set for the adoption of organic farming [13]. Through these programmes, the UAE supports the methods of organic farming and helps farmers to grow good quality organs and products.

International trade and market growth

The MOCCAE came up with a new marketing channel through a memorandum of understanding with the retail stores through which the farmers were allowed to sell their produce to the consumers [1]. This assures farmers to use sustainable methods of farming and offers them an opportunity to access pest-free foods. The organic market is constantly growing with such activities' assistance instead of strict governmental measures and informational campaigns. Other specific measures which have also helped market growth include the specific regulations that have been put in place to encourage and enhance the marketing and purchase of organic products [4].

Public awareness and empowerment

The MOCCAE provides the public with several opportunities including but not limited to employable campaigns, workshops as well as social media initiatives to build awareness towards organic farming among the public. In as much as the academic curriculum covers the benefits of pesticide-free and environmentally sustainable food products, learners are also through social media, school trips and Agritourism [6]. Farmers and consumers can exchange information during nasty incidents, or special occasions like school completion programmes and marketing events among others. In addition, in 2018, the UAE enacted the Cabinet Resolution No. 31 of Community Agriculture aimed to support sustainable farming practices including, organic farming [14]. Moreover, according the government data, as in a previous study, about 50% of the farmers have claimed benefits from Renewable Energy Law No. 31 of 2018, which has recently empowered potential individuals to start their organic farming sector. This creates the necessary culture of innovation and skilled development in the field of organic farming.

Research and development

Again, research and development form the basis of conducting more detailed research to obtain suitable techniques which can enhance the application of organic farming in the UAE. Some of these objectives include: Developing better marketing strategies, increasing land productivity, increasing crop production efficiency, and sustainably managing pests, objectives that today enjoy considerable support at the MOCCAE. A memorable example of carrying out a joint study regarding farmers was to establish new technologies of farming like enhanced or organic silica granular fertilisers. Studies showed that the use of these materials leads to enhanced potato yields by 30-40% [3]. This proves that scientific production is an efficient tool to enhance and innovate the sustainability and productivity of the sector of organic farming.

Theoretical models

Diffusion of innovation (DOI) theory

The Diffusion of Innovation (DOI) theory a theory developed by Everett M. Rogers identifies a clear structure in solving the analysis of the processes regarding the spread of new ideas, practices or technology within a community or social system across time. In the context of organic farming in the UAE, this theory helps to understand the stages farmers go through before adopting new innovative practices within a farmer's organic agricultural decision-making process [2].

The DOI theory identifies five critical stages in the adoption process: Some of these stages include; awareness, interest, evaluation, trial and adoption. First of all, farmers have to acquire knowledge about the procedure of organic farming and the possible advan-

tages. This awareness is a result of information received from agricultural extension services, media or word of mouth. As soon as farmers become informed about biotechnology, they show an interest and acquire further information to learn about the applicability and utility of such processes [6]. In the last stage, commonly referred to as the 'evaluation' stage; they balance the advantages and the disadvantages of shifting to the practice of organic farming with the market demand, and resources about the likely returns. It enables the farmers to try out the methods or organic farming or production on a trial base, giving them a first feel of the practical issues as well as the results. In the case that a trial is successful, farmers move to mainstream adoption of the practices and include organic within their farming systems [7]. Hence, the determinants of organic farming innovations in the UAE are government policies and subsidies as well as access to training, while barriers lie in the way of adoption, adoption may be limited by high initial costs, lack of technical know-how and uncertainties in the markets.

Describing this with the DOI theory offers a structured understanding of how organic farming practices became diffused among farmers based in the UAE. The theory's five-stage adoption process is well supported in the results, and in particular, the findings underscore the importance of awareness and evaluation. In the study, being informed via agricultural extension services, through media, or through peer networks was associated with increased interest in organic farming among the farmers [3]. However, the third stage, the evaluation stage of the project, posed a huge challenge as most of the farmers approached the stage with high initial costs, unclear demand in the market and a lack of policy support. This finding confirms that although government incentives and training programs encourage adoption, complexity such as scarcity of financial means and lack of knowledge will slow the process [6]. Thus it reinforces the idea of the DOI framework, or the idea that external support to farmers in their move from awareness to scale adoption of organic practices is important.

Social cognitive theory (SCT)

The concept of Social Cognitive Theory shifts focus from the behaviour itself to the ways beliefs, behaviours, and environmental resources interact to support or hinder goal pursuit. The theory is relevant to the current study as it seeks to explain the adoption of organic farming in the UAE mainly because the values of the individual farmers and the communities are of importance [6].

Also, SCT focuses on reciprocal relationships between individuals, their networks, the environment, and their interconnection. For instance, a farmer's decision to adopt organic farming results from motives such as desirable attitudes towards the natural environment or personal health for instance, however, this decision can also be influenced by social pressures from fellow farmers, community and agricultural officials. These awareness and acceptability forums include knowledge-sharing forums, other farmers' cooperatives, and community-based organizations [15].

Additionally, SCT stresses observational learning and self-efficacy. On this view, the behaviour change theory postulates that farmers are likely to help spread organic farming practices if only they notice others within their immediate society doing so. It is self-encouraging to see others achieving higher yields, better soil quality, or better market prices by going organic [14].

In the UAE, social forces represented by the grouping of farmers, influence from friends as well as the ability of the entire community to innovate are critical in determining change in traditional farming. Using the principles of SCT governments and non-governmental organizations can encourage participation and knowledge sharing and hence expand the effects creating a domino effect for the increased rate of adoption of organic agriculture [3]. SCT therefore presents a coherent way of merging individual incentives with community means for fertiliser use to achieve sustainable farming that is in line with UAE's environmental and food supplies agenda.

The research findings are very supportive of the principles of Social Cognitive Theory along the dimensions of social influence and observational learning. Organic farming in the UAE was a response to the pressure from other farmers, no doubt but also with inspiration from their peers, a thriving community network and success stories of other farmers who have already made success in organic farming [14]. The findings of the study indicated that the attitude and confidence attached to the use and adoption of organic agriculture were greatly influenced by the cooperatives, knowledge-sharing forums and community-based initiatives. In addition, observational learning was seen when farmers observed that their peers were successful in promoting market profitability and soil health, farmers were more likely to adopt organic practices themselves [3]. Yet the study disclosed that social pressures as well as the opposition from traditional farming communities became obstacles to wide adoption.

Materials and Methods

Data collection

Semi-structured interviews formed the core of the data collection technique since they allowed the researchers to capture rich qualitative data in us structured way. In the present study, seven organic farmers from the UAE were employed using a purposive sampling technique to generalise results based on different farming backgrounds and levels of experience. Discourse sampling was particularly useful in that it helped to recruit participants who had the right type of insight into the practice of organic farming and the issues involved when engaging in organic farming. The interview guide was developed to consist of some general questions focused on farmers' difficulties, attitudes, purposes, and activities, connected to the transformation to organic farming. Most of the interviews were face-to-face or conducted over the phone and were recorded with permission and transcribed identically to the original. The qualitative data was used effectively to establish an understanding of the main trends and factors determining the promotion of organic farming in the UAE

Participants

The study subjects recruited a small number of participants (seven), which is sufficient for a type of phenomenological research that is not intended to find probability samples but aims to provide representative descriptions. All the participants have practised organic farming in the UAE for more than ten years, which gives them credibility that preserves the high reliability of the information received. In phenomenological studies small samples of five participants as cited in [9,16]) or from 1-20 participants as cited in [16] can be sufficient for generating adequate patterns of participants' experiences. For this reason, this research stays relevant and valid in generating more qualities on the experiences of organic farming in the UAE.

Participants have been selected to have very wide experience of organic farming within UAE, covering all aspects of its challenges, benefits, or practices as well. In particular, the study focused only on the farmers engaged in organic farming for more than 10 years as their experience in the field was judged to be critical for the development of a dependable insight into the problem. Furthermore, the purpose of the selection was to embrace people with varying farming backgrounds such as the kinds of crops practised, size and scale of operation, to peruse a broad scope of organic farming practices.

Although this selection approach introduced potential biases as it let the participants have expertise relevant to the questions asked, it also made sure that the participants had expertise. For example, the study has inadvertently favoured farmers who had managed to keep organic farming going for several years when they had weathered several setbacks or even given up on organic practices.

Data analysis

A thematic analysis approach to the analysis of the interview data is also used, which is particularly appropriate to identify, categorise, and interpret patterns within qualitative data. Specifically, this method allows focusing on the key themes that involve social processes such as the process of transition to organic farming by systematically investigating participants' experiences, challenges, and perspectives. The analysis was executed through a structured and rigorous process to make certain that any dimension of any insight is surely an understanding of the data. Transcribing all interviews verbatim was the first of the stages in the analysis for the sake of the accuracy of participants' responses. After transcribing, they approached the data several times so that one would become familiar with the content and have a clear read of the ideas and concepts that recur. The first step of this was then to undergo an initial coding process in which particular phrases, sentences, or ideas related to the purposes of the study were assigned descriptive labels or "codes." These codes were grouped into larger categories based on patterns and commonality in different interviews. This resulted in the emergence of overarching themes that encapsulated the main trends and drivers of organic farming in the UAE. After codes and themes were continuously refined, such that the codes were consistent and relevant to the research questions, they were used to further enhance the credibility of the findings. To validate the thematic analysis, triangulation methods including checking themes against literature and peer debriefing were also used.

Research ethics and confidentiality

The study adhered to ethical standards to ensure the protection of the rights of participants. By [16], the scholars communicated

the study objectives and purposes to the participants, both at the outset and throughout the research process. An informed consent form was also used to indicate that their participation was voluntary, they had the right to withdraw at any time without providing reasons, and all their responses would remain completely confidential. The form also stated that when the research results are published, participants would not be identified by name or any other information that could be used to infer their identity

Results

Table 1: Themes extracted from responses

Theme	Participants	Keywords
Environmental Conservation and Sustainability	2, 3, 6, 7	Environment, soil health, biodiversity, sustainability, wildlife, eco-friendly practices, water conservation
Challenges and Transitioning to Organic Farming	1, 3, 4, 5, 6	Transitioning, challenges, initial costs, pest control, education, research, experimentation, support networks
Challenges and Recommendations for Transitioning	1, 4, 5, 6, 7	Recommendations, support systems, soil health, crop rotation, local networks, sustainable methods, mentorship
Motivation for Organic Farming	1, 2, 3, 6, 7	Food safety, sustainability, public health, environmental protection, chemical-free produce, ethical responsibility
Consumer Demand and Market Opportunities	3, 6, 7	Consumer demand, market growth, sustainable food, health-conscious, government support, ethical food production

Theme 1: Environmental conservation and sustainability

The theme of organic growth is to keep the land safe and ensure longevity. People believe that organic farming is better for the environment as it uses fewer chemicals, improves the health of the land, helps wildlife, and ensures farming longevity. Organic farming is a good method for conserving the land and other wild animals since gardening is one way of pest the destruction of the land [15]. Participants 2 and 3 said the following:

'Organic farming helps the environment by keeping the soil in good condition and decreasing pollution in the atmosphere and water'.

The members emphasize the concept of organic production to save the Earth and not trash. This assists the environment to remain well-ordered. Participant 6 agreed with this and said:

'Organic farming supports the environment, makes soil more fertile, and uses less water, all of which are beneficial to sustainable agriculture'.

Some of the advantages of using organic farming are that it fosters wildlife and healthy ground and water [14]. This theme shows that people, realise that organic farming is an important way to save the Earth. This highlights the importance of farming which is beneficial for the Earth in the long term. People who grow organically care about the environment and build food systems that last.

Theme 2: Challenges and transitioning to organic farming

This theme is mostly related to the challenges people face when converting to organic farming methods. Participants were honest about the challenges they faced during the process, such as the cost of initial investment and difficulty in getting accustomed to new farming methods, while also dealing with questions from peers regarding traditional farming methods. Several aspects should be learned and solved when one starts growing organically. This demonstrates the importance of persevering, learning, and receiving help. Three participants stated the following

'The initial challenge was proving to myself and peers the financial feasibility and benefits of sustainable farming'.

In this case, participants admitted the difficulty in mentally accepting organic farming and emphasised the importance of educating and raising knowledge to change the mentality of people. Additionally, participant 4 emphasised the difficulty in converting from conventional to organic farming methods, as follows:

'To find efficient procedures, transferring from conventional to organic farming required a lot of research and experimenting'.

In reality, finding and using organic farming methods is difficult; thus, studying and testing such methods is important [6]. The primary concept behind this theme is to demonstrate the issues faced by real people when growing organically. However, people who participate show strength and drive by teaching newcomers to make the transition easier. To persevere through the difficult parts of transitioning to organic farming methods, their stories highlight the importance of support networks, learning new ideas, and retaining important information.

Theme 3: Challenges and recommendations for transitioning to organic farming

In this theme, the issues people face when transitioning to organic farming methods and solutions to these challenges are examined. The participants talked about various issues, including the high initial investment, learning about organic farming, getting accustomed to new farming methods, and overcoming questions from peers regarding traditional farming methods. Consequently, members advised newcomers who wanted to start an organic farm in the UAE. Emphasis was placed on getting schooled, creating support systems, and continuing education.

'Getting used to sustainable pest control methods was hard initially, but the potential benefits outweighed the problems', says Participant 5.

On this occasion, the participant agreed that employing natural methods to clear out pests was tough initially; however, emphasised the long-term advantages of health and sustainability.

'Start small, put soil health first, and get help and advice from people in the local organic farming community', says Participant 1.

This demonstrates the importance of area networks and guidance when transitioning to organic farming. The primary concept of this theme is that transitioning to organic farming can be difficult; however, learning, obtaining help, and developing connections will help overcome these issues. Newcomers to organic farming in the UAE can substantially learn from experienced practitioners.

Theme 4: Motivation for farming

This theme analyses the reasons that made participants adopt organic farming practices. As stated in the interviews, these participants had different reasons such as; environmental degradation, food hazards, and craving to encourage healthy and sustainable practices in agriculture. Participant 1 stated

"I was inspired by the aspiration to produce healthier food options for my community".

Participant 6 stated that

"Concerns about food security and environmental degradation inspired me to adopt organic farming practices".

The response shows that the motivation shared is the ethical consideration so that they offer chemical-free safe organic products. Interviewees recognised modern problems of farming, soil exhaustion and the depletion of soil, and genetically, the need for working with sustainable agriculture. These motivations demonstrate the signal farmers held to balance the production of organics demanded by the consuming public and at the same time ensure that the environment and other consumers were not negatively impacted by their production processes [15]. This theme reveals that many UAE organic farmers enjoy immense 'business purpose and tenure' which is the essential ingredient towards the realisation of the sector. Since they link their values and beliefs to the ambitions for a healthier and more sustainable society and environment, these farmers are a driving force of change-making in the sphere of sustainable agriculture in the region.

Theme 5: Consumer demand and market opportunities

Concerning this, we will look at how consumer choice and market trends impact the use of organic farming. Several participants pointed towards the general increase in the need for ORG products as a great incentive. Participant 3 stated, *"I believe organic farming will continue to thrive in the UAE, driven by consumer demand for healthy and sustainable food options."*

Likewise, Participant 7 said

"I see a promising future for organic farming in the UAE, with growing consumer preference for ethically and sustainably produced food"

The analysis also shows that due to rising knowledge of health benefits and environmental impacts of the natural products people have bought and continue to patronize organic food products. The farmers regard this as a strategic chance that provides them ground to introduce new products and consequently compete effectively with fellow farmers in the agricultural market [12]. They also pointed out that continued advocacy and education of the markets and consumers through the government to promote more demand and sustainability of organic farming.

This theme at the same time focuses on the positive correlation between consumer preferences and the growth of organic farming. Farmers know that the adaptation of the overall business functioning to consumers' needs is beneficial, both for the business and the community of farmers. Ethical and health consciousness of food also put the seal on the sustainability of an organic farming system in UAE - far into the future.

Discussion

The current increasing trend towards organic farming in the UAE, although still in its infancy, presents a promising opportunity for advancing sustainability and enhancing the environmental standards in the country. This trend reflects global concerns regarding agricultural environmental impacts and the increasing interest in more eco-friendly farming methods [15]. Organic farming thus emerges as a cardinal approach to dealing with these concerns because it leads not only to the improvement of soil health and other biological cycles but also to the stability of food production into the future [3]. This study thus advances the knowledge that while there is potential in organic farming for UAE, its adoption is not without some obstacles including high start-up costs and the challenges farmers face when transitioning from conventional to organic production. Few people have strong feelings about the UAE's choice to convert to organic farming. Fears about the environment, real-world challenges, and plans to convert to organic farming, which is better for the environment, shaped this case [15]. The world and living sustainably are two important aspects to consider. Many people believe that gardening organically is a good way to save the Earth and ensure its longevity. Many people want to keep their land healthy, avoid chemicals, and protect wildlife [8]. All these factors improve when growing organically. Additionally, this helps methods of food production become more flexible. Organic farming is useful for growing more than just food. Moreover, ensuring the safety of natural materials and slowing down damage to the environment are important aspects [9]. People are excited to hear that converting to organic farming will benefit the environment; however, they also know of its difficulties. Using organic methods in farms is challenging as the initial investment is high and such methods require a long time to learn [8]. To overcome these challenges, people need to be dedicated, educated, and have a group of individuals who can help them through the difficult process of converting to organic farming. Various challenges exist; however, individuals are strong and want to perform well. A previous study [11] stated that striving to continue organic farming indicates the importance of perseverance if organic farming is to pay off in the long run.

Immense information was also obtained regarding various challenges and their solutions when transitioning to organic farming. This helps people understand the real challenges farmers face and provides good tips on solving them. Being involved in local neighbourhoods, learning about organic farming, and meeting new people are important [8]. This is because starting a farm is expensive and requires assistance from other farms. Transitioning to organic farming is easier if people share and help each other [10]. This can also help make the weather safer for gardening. According to this study, real-life situations, environmental concerns, and group work to support organic farming in the UAE are constantly intertwined. Several people use organic farming for work, the Earth, and to ensure sufficient food production. Thus, these issues must be fixed, and farms must be provided with the information and guidelines required to transition to organic farming. To help nature flourish in the UAE and globally, organic farming can reach its utmost potential if individuals take care of the environment and help those in need.

For sustainable future development, the case where the UAE can focus on organic farming efforts and provide an example of the agricultural system within a country [9]. The approach of transforming organic farming is an important direction for development within the framework of the UAE national agriculture to become a key player in global food security and the preservation of natural resources. The findings of this research show that going organic can help avoid negative impacts on the environment and feed the world's increasing population despite climate complexities or other circumstances.

To enhance the direction of future sustainable development in the UAE, the country must focus on researching and developing methods of successful organic farming, investing in educational courses to teach farmers and supplying consumers with knowledge regarding the positive consequences of consuming food grown using organic farming techniques [8]. Forming and strengthening the collaborations between the governmental agencies, universities and the organic farmers will be crucial for future additional development and flexibility for Organic farming. By doing so, the UAE can effectively tackle those challenges and explore opportunities revealed in this study to become more engaged in the global and regional promotion of sustainable agriculture.

Conclusions

The change to organic farming is a proof of progressive strategy towards the environment and improved farming techniques in the UAE. For the high initial costs, constant education, and adaptation it has not been a seamless journey but these issues are being met head-on by farmers, government, and community networks. This paper has identified that the new form of farming, organic farming in the UAE, can not only produce healthy food and protect the resources, including the soil and water but also contribute to the sustainable global food system. Through promoting education and support structures as well as the development of strategic partnerships, the UAE has a reference point for other countries to measure agricultural and environmental issues. Finally, the UAE's focus on organic farming shows the advancement of how a united approach can promote continuing environmental conservation to support the cause of food security in sustainable development globally.

Limitations

Based on the information presented in this study and the gaps and limitations identified, several policy recommendations can be suggested to encourage organic farming development in the UAE. Drawing on the success factors observed in other countries, these recommendations entail monetary incentives, technical assistance and training, education, and knowledge-sharing as key components for the successful adoption of organic farming in the UAE.

Recommendations

The study recommends public and private partnerships. Government and private sector interaction in organic farming has been a key notable factor toward the success of organic farming in other countries such as India and New Zealand. The Indian government supports the currently showing corporate finance, volunteering support to organic farmers, and technical support [10]. Similarly, some of New Zealand's organic cooperatives receive funding from both the public and private sectors to enhance production and marketing [11]. There are many potential opportunities for PPPs in the UAE, where the private sector identifies the need for the development of organic agriculture and cooperates with farmers to offer the tools, infrastructures, and distribution networks required for organic products, Moreover, the Availability of Low-Interest Funds is also recommended. Securing funding for farming activities can be a major challenge for many organic farmers. For example, countries like France offer low-interest loans to farms practising sustainable agriculture like organic farming. The UAE could adopt a similar system, in which commercial development banks or publicly subsidised institutions provide low rates of interest to organic farmers. Such an initiative would help farmers invest their capital into organic farming inputs like drip irrigation, organic certified seed, and compost.

Question	Response
What inspired you to get involved in organic farming?	I was inspired by the aspiration to produce healthier food options for my community.
How do you perceive the impact of organic farming on the environment?	Organic farming has a significantly positive impact on the environment by reducing the usage of chemicals and promoting soil health and biodiversity.
What challenges have you faced in transitioning to organic farming methods?	When transitioning to organic farming, I faced challenges, such as high initial investment costs and educating myself about organic practices.
How do you envision the future of organic farming in the UAE?	I see a promising future for organic farming in the UAE, with increasing consumer demand for sustainable and organic products.
What advice would you give to someone considering starting organic farming in the UAE?	My advice would be to start small, educate yourself about organic practices, and seek support from local agricultural organisations.

Transcript 1

Question	Response
What inspired you to get involved in organic farming?	My passion for sustainability and environmental conservation drove me to organic farming.
How do you perceive the impact of organic farming on the environment?	Organic farming contributes to environmental sustainability by preserving soil quality and minimising water and air pollution.
What challenges have you faced in transitioning to organic farming methods?	One of the challenges I encountered was adapting to natural pest control methods and effectively managing crop rotation.
How do you envision the future of organic farming in the UAE?	The future of organic farming in the UAE looks bright, with growing consumer awareness and government support.
What advice would you give to someone considering starting organic farming in the UAE?	I would recommend networking with experienced organic farmers, attending workshops, and staying updated on industry trends.

Transcript 2

Question	Response
What inspired you to get involved in organic farming?	Witnessing the degradation of conventional farming methods motivated me to switch (convert) to organic farming practices.
How do you perceive the impact of organic farming on the environment?	Organic farming plays a crucial role in conserving natural resources and preserving ecosystems for future generations.
What challenges have you faced in transitioning to organic farming methods?	The initial challenge was convincing myself and my peers of the viability and benefits of organic farming.
How do you envision the future of organic farming in the UAE?	I believe organic farming will continue to thrive in the UAE, driven by consumer demand for healthy and sustainable food options.
What advice would you give to someone considering starting organic farming in the UAE?	My advice is to be patient, embrace continuous learning, and seek guidance from mentors in the organic farming community.

Transcript 3

Question	Response
What inspired you to get involved in organic farming?	Growing concerns about food safety and chemical residues led me to explore organic farming.
How do you perceive the impact of organic farming on the environment?	Organic farming promotes soil fertility, biodiversity, and water conservation, leading to a healthier environment.
What challenges have you faced in transitioning to organic farming methods?	Transitioning from conventional to organic farming required extensive research and experimentation to find suitable practices.
How do you envision the future of organic farming in the UAE?	I am optimistic about the future of organic farming in the UAE, given the increasing support from government initiatives and consumer preferences.
What advice would you give to someone considering starting organic farming in the UAE?	I recommend starting with a thorough soil analysis, attending training programmes, and building relationships with organic farming associations.

Transcript 4

Question	Response
What inspired you to get involved in organic farming?	My interest in sustainable agriculture and respect for nature motivated me to pursue organic farming.
How do you perceive the impact of organic farming on the environment?	Organic farming minimises environmental harm by avoiding synthetic chemicals and promoting natural ecosystem balance.
What challenges have you faced in transitioning to organic farming methods?	Adapting to organic pest management techniques was initially challenging, but the long-term benefits outweighed the obstacles.
How do you envision the future of organic farming in the UAE?	The future of organic farming in the UAE is bright, with a shift toward healthier and more environmentally conscious food choices.
What advice would you give to someone considering starting organic farming in the UAE?	My advice would be to focus on soil health, diversify crop rotations, and embrace innovative organic farming techniques.

Transcript 5

Question	Response
What inspired you to get involved in organic farming?	Concerns about food security and environmental degradation inspired me to adopt organic farming practices.
How do you perceive the impact of organic farming on the environment?	Organic farming enhances soil fertility, reduces water consumption, and protects biodiversity, contributing to sustainable agriculture.
What challenges have you faced in transitioning to organic farming methods?	Overcoming scepticism from peers and conventional farming habits posed challenges during the transition phase.
How do you envision the future of organic farming in the UAE?	I believe that organic farming will continue to grow in the UAE, driven by consumer demand for ethically produced food.
What advice would you give to someone considering starting organic farming in the UAE?	My advice is to start small, prioritise soil health, and engage with the local organic farming community for support and guidance.

Transcript 6

Question	Response
What inspired you to get involved in organic farming?	I was drawn to organic farming by the aspiration to produce food that is free from harmful chemicals and additives.
How do you perceive the impact of organic farming on the environment?	Organic farming fosters biodiversity, improves soil health, and reduces the carbon footprint, making it a sustainable choice.
What challenges have you faced in transitioning to organic farming methods?	The initial challenge was sourcing organic inputs and adapting to new farming techniques; however, the journey has been rewarding.
How do you envision the future of organic farming in the UAE?	I see a promising future for organic farming in the UAE, with growing consumer preference for ethically and sustainably produced food.
What advice would you give to someone considering starting organic farming in the UAE?	My advice would be to start small, prioritise soil health, and engage with the local organic farming community for support and guidance.

Transcript 7

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