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TRACING THE POSITIVE IMPACT OF ORGANIC AGRICULTURE FOR FOOD SECURITY: A REVIEW OF RECENT LITERATURE

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Abstract

This research explores the positive impact of organic farming on food security through a review of recent literature. Organic farming, which avoids the use of synthetic chemicals, contributes to improved environmental health by improving soil fertility, reducing water pollution, and increasing biodiversity. Organic produce offers higher food safety due to the lack of pesticide residues, and often contains better nutrients such as vitamins and antioxidants. In addition to environmental and health benefits, organic farming also provides economic and social advantages for farmers, such as premium prices and the creation of new jobs. These findings underline the vital role organic farming plays in achieving sustainable and inclusive food security.

Keywords: Positive Impact, Organic Farming, Food Security, Recent Literature Review

Introduction

Food security is one of the biggest issues facing the global community today. Food security is the condition in which all individuals, at all times, have sufficient physical, social and economic access to sufficient, safe and nutritious food to fulfil the needs of an active and healthy life. Food security includes four main pillars; food availability, food access, food utilisation, as well as the stability of these three factors over time (Organic Farming Research Foundation (OFRF), 2012) . This condition involves not only the quantity of food available, but also adequate food quality, fair distribution methods, and sustainability of food production systems in order to continue to meet the needs of the community both now and in the future (Delate et al., 2015) .

Increasing food demand is one of the biggest challenges facing global society as the population continues to grow. In recent decades, the world's population has increased rapidly, fuelling higher demand for food resources. It is estimated that the global population will reach around 9.7 billion by 2050, meaning that food production will need to increase significantly to fulfil basic human nutritional needs. This calls for more efficient and sustainable agricultural systems that increase production yields without compromising environmental health and biodiversity (Shepherd et al., 2003) .

In addition to the need for increased quantities, there are also challenges in ensuring that the food produced is able to meet the necessary quality and safety standards. As populations grow, food distribution becomes increasingly complex, and unequal access to food resources can worsen the situation in some regions, especially in developing countries (Smith, 2020) . Therefore, it is crucial to develop innovative

strategies in agriculture, including the application of new technologies and sustainable farming methods, so that production can increase efficiently. This requires the collaboration of various parties, including governments, the private sector, and the international community, to ensure that global food needs can be met in an equitable and sustainable manner (Crowder & Reganold ., 2015)

As the world's population continues to grow rapidly, the demand for sufficient, sustainable and high-quality food is becoming more pressing. Conventional agriculture, which relies on the use of chemical pesticides and fertilisers, has been widely criticised for causing environmental degradation, decreased soil fertility and threats to biodiversity. In addition, the use of these chemicals has also been linked to various human health problems (Badgley & J. Perfecto, 2007) .

Amidst these challenges, organic farming is emerging as a promising alternative to support global food security. Organic farming prioritises environmentally friendly practices, such as crop rotation, composting, and the use of natural pesticides. These practices not only contribute to environmental health but are also considered to produce food products that are healthier and safer for consumption (Clark, 2020)

However, while the potential of organic farming looks promising, there are still many challenges to be faced. For example, organic farming yields are often perceived as lower compared to conventional farming, which may affect food availability in the long run. In addition, higher production costs and lack of policy support in some countries are barriers to the development of organic farming (Seufert et al., 2012) .

Given the relevance and urgency of food security issues, it is important to further explore the positive impacts of organic farming through a review of recent literature. This review is expected to provide a more comprehensive insight into the contribution of organic farming to food security, as well as identify strategies that can be adopted to overcome the challenges.

Thus, this research will discuss the various positive impacts that organic farming has on food security.

Research Methods

The study in this research uses the literature method. The literature research method is an approach used to collect and analyse information from various existing written sources, with the aim of understanding, evaluating, or providing a new perspective on a topic or phenomenon. In this method, researchers identify, review, and synthesise findings from relevant literature, such as books, journal articles, research reports, and other publications, to build a solid foundation for the research questions raised (Fink, 2019) ; (Alvesson & Sandberg, 2013) . This process involves systematically searching for data, critically interpreting the content of the literature, and drawing conclusions based on the extracted information. In this way, literature research can help

reveal trends, discover knowledge gaps, and formulate new hypotheses that can be further explored through follow-up research or other research methods (Knopf, 2006).

Results and Discussion

The Positive Impact of Organic Farming on Food Security

Organic farming has various positive impacts on food security, which is particularly important in a global context of population growth and climate change. First of all, organic farming contributes to the provision of high-quality food that is free from harmful chemicals. The application of organic farming techniques, which use natural fertilisers and biological pesticides, results in food products that are safer and healthier for consumers. This food safety is an essential component of food security, ensuring that the food consumed is not only sufficient in terms of quantity but also of high quality and safe for health (Poudel et al., 2002) .

Secondly, organic farming practices support biodiversity which is crucial for a sustainable agricultural ecosystem. By avoiding the extensive use of chemical pesticides and mono-cultures, organic farming promotes the preservation of various plant and animal species. This biodiversity helps maintain ecosystem balance and increases crop resistance to diseases and pests, thereby reducing the risk of crop failure. Food security becomes more secure due to reduced dependence on external inputs and increased ability of farmland to produce food sustainably (Hole et al., 2005) .

Furthermore, organic farming contributes to maintaining soil and water quality, which are vital resources for long-term food production. Techniques such as composting, crop rotation, and the use of natural ground cover help improve soil fertility and soil structure, and prevent erosion. In addition, without the application of synthetic pesticides and fertilisers, the risk of ground and surface water pollution is reduced, maintaining water quality that is critical for irrigation and consumption (Gomiero et al., 2011) .

In addition to protecting the environment, organic farming also ensures the economic sustainability of local farmers. By reducing dependence on expensive agricultural inputs such as hybrid seeds and synthetic chemicals, farmers can reduce their production costs and increase their profits. Organic farming often utilises traditional practices and local knowledge, which can enhance farmers' self-reliance and the economic stability of rural communities. This economic stability is crucial in ensuring that farmers can continue to produce food and support local food security (Pimentel et al., 2005) .

Furthermore, organic farming can have a positive impact on climate change that affects global food security. Organic farming practices, such as the use of compost and agroforestry, contribute to carbon sequestration in soil and vegetation. Moreover, by reducing emissions from the use of synthetic inputs, organic farming helps reduce the carbon footprint of the agricultural sector. This reduction in greenhouse gas emissions

not only helps mitigate climate change but also makes agricultural systems more adaptive to changing climate conditions (Crowder & Reganold ., 2015)

Finally, organic farming supports community development and raises awareness of the importance of sustainable food production. Through education and training initiatives that often accompany organic farming practices, farmers and communities are invited to understand and appreciate the importance of protecting the environment and producing food responsibly (Niggli et al., 2009) . This awareness can drive the collective struggle towards inclusive and sustainable food security, where every individual has equitable access to sufficient, healthy and safe food. All of this suggests that organic agriculture plays a very important role in supporting global food security in the long term.

The Relationship Between Organic Farming and Food Security

Organic farming is an agricultural system that avoids the use of synthetic pesticides, herbicides, and chemical fertilisers. Instead, it emphasises natural practices such as crop rotation, compost, cover cropping, and biological pest control. The basic principles of organic farming aim to increase biodiversity, and maintain and improve long-term soil health (Lotter, 2003) .

Organic farming has a significant positive impact on the environment. It helps in reducing water and soil pollution as it does not use harmful chemicals. In addition, organic farming practices also support biodiversity by providing habitats for various species of flora and fauna, as well as improving soil quality through natural methods (Badgley & J. Perfecto, 2007) .

One of the main challenges of organic farming is effectiveness in terms of food production. However, with proper management techniques, organic farming can produce quite high outputs. The use of suitable crop varieties and good agronomic practices can help increase yields without causing damage to the environment, which is often the case with conventional farming (Reganold & Wachter, 2016) .

Organic farming tends to be more labour-intensive than conventional farming due to higher manualisation and the need for meticulous management. This creates more jobs, especially in rural areas, which can boost the local economy. In addition, organic products usually have a higher selling value, potentially increasing farmers' income (Food and Agriculture Organization (FAO), 2007) .

Food security revolves around the ability of the food system to provide sufficient, affordable and nutritious food to the population. Organic farming contributes to food security by providing products that are free from harmful pesticide residues and are nutritionally superior. Food safety is also improved as the food produced does not contain artificial chemicals (Lampkin, 1999) .

While organic farming has many benefits, not all situations allow for full implementation of this method. A balanced approach between organic and

conventional agriculture may be necessary to meet global food needs. The combination of organic practices with modern technology and agrotechnological innovations can create a more sustainable and efficient farming system in the face of food security challenges (Lockeretz ., 2007)

Thus, organic farming has an important role to play in improving food security and maintaining environmental sustainability. However, collaboration and adaptation of various farming methods are required to achieve an optimal balance in meeting the growing global food demand.

Conclusion

Organic farming has a significant positive impact on the environment. Organic farming practices that avoid the use of synthetic chemicals help improve soil and water health, and support biodiversity. Organically managed soils tend to have better structure, higher water retention ability, and less erosion.

In terms of food safety, organic farming guarantees food that is free from harmful pesticide residues. Organic products also often have higher nutritional value compared to conventional products. Research shows that some organic products contain higher levels of vitamins, minerals and antioxidants, which contribute to consumer health.

Socio-economically, organic farming can improve farmers' welfare through the premium price that organic products can fetch. In addition, this method also creates more jobs in the agricultural sector due to the need for more intensive management. Thus, organic farming not only contributes to food security in terms of quality and safety, but also plays a role in improving the welfare of rural communities.

Overall, the current literature shows that organic farming has many positive impacts that can support food security, protect the environment, and improve socio-economic well-being.

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