Transition to sustainable eco-development: A case of transition "Vasmee" into "Midigama fruit farm"

K.N.N.Siva*[1], SH,Nuwan Tharanga[2],

[1*]Department of Agricultural Economics & Agribusiness, Faculty of Agriculture, University of Ruhuna.

[2]Midigama Fruit farm. Ahangama.

*nadeeds@gmail.com

Abstract

The Midigama Fruit Farm (MFF), initially established in 1996 as Vasmee, aimed to revolutionize fruit crop development while promoting environmental sustainability and societal welfare. However, operational challenges led to its discontinuation in 2007. Under new management, the farm is now transitioning into a sustainable agroecosystem, focusing on diverse fruit tree cultivation and integrated coconut farming. This study explores the strategic initiatives taken to restore the farm using SWOT and TOWS analyses to leverage internal strengths and external opportunities while addressing weaknesses and threats. The research evaluates the feasibility of agro-tourism development and examines current farm activities that enhance ecological sustainability. Key findings highlight the role of ecological farming, innovative technologies, and agro-tourism in achieving economic viability. Recommendations emphasize strengthening community engagement, biodiversity conservation, and sustainable business strategies to position Midigama Fruit Farm as a model for sustainable agro-tourism in Sri Lanka.

Keywords: Agro-tourism, Ecological farming, Sustainability, Plantation management

Introduction

The establishment of Vasmee in 1996 aimed to create a unique fruit farming project in Midigama, catalyzing fruit crop development while fostering environmental sustainability and societal welfare. However, operational challenges led to its discontinuation in 2007. Presently, under new management, the farm is being transformed into Midigama Fruit Farm (MFF), transitioning 12 acres of land into a sustainable agricultural landscape. The farm integrates innovative technologies and eco-friendly practices to ensure long-term sustainability and operational efficiency. The overarching vision of MFF is to serve as a model for ecological agricultural practices, optimizing land use, enhancing biodiversity, fortifying soil health, preserving the environment, and maintaining economic viability through sustainable farming practices.

MFF has now embarked on a mission to restore the farm's former productivity by promoting sustainable agricultural practices and diversified cropping systems. The farm has gained significant attention from both local and international visitors who seek nature-based experiences. It is now a certified organic farm, positioning itself as a leading agro-ecological enterprise in Sri Lanka's Southern Province. The primary objectives of MFF's redevelopment include revitalizing abandoned farmland into an agro-tourism hotspot, promoting sustainable agricultural techniques, optimizing land use, and enhancing local livelihoods and economic viability in the region.

In line with these objectives, this study assesses the farm's potential for agro-tourism development, evaluates its ecological sustainability efforts, and provides recommendations for further enhancing sustainable agro-tourism at Midigama Fruit Farm.

Literature Review

Sustainable agro-tourism

Sustainable agro-tourism is a burgeoning field within the broader context of sustainable tourism, focusing on the integration of agricultural activities with tourism experiences while promoting environmental conservation, cultural preservation, and community development (Font, 2002). It emphasizes the principles of sustainability, including responsible resource management, community participation, and economic viability, to ensure that tourism activities contribute

positively to local livelihoods and environmental integrity (Reed, 2008). Sustainable agro-tourism initiatives often involve farm stays, agricultural tours, and experiential learning opportunities that allow visitors to engage with local farming practices, culinary traditions, and natural landscapes while fostering an appreciation for the interconnectedness of food, culture, and ecology (Hall & Kirkpatrick, 2019). By adopting sustainable practices such as organic farming, biodiversity conservation, and waste reduction, agro-tourism enterprises aim to minimize their environmental footprint and maximize the socio-economic benefits for host communities (Bramwell & Lane, 2011).

Ecological farming

Ecological farming, also known as agroecology, represents a holistic approach to agricultural production that prioritizes environmental sustainability, biodiversity conservation, and ecosystem resilience (Altieri, 1995). It emphasizes the integration of natural processes, such as nutrient cycling, pest regulation, and soil health, to enhance agricultural productivity while minimizing negative impacts on the environment (Pretty et al., 2006). Ecological farming practices include crop diversification, agroforestry, organic farming, and integrated pest management, which aim to promote soil fertility, enhance biodiversity, and reduce reliance on external inputs such as synthetic fertilizers and pesticides (Wezel et al., 2009). By mimicking natural ecosystems and leveraging ecological principles, ecological farming systems strive to create resilient and regenerative agricultural landscapes that contribute to food security, climate change mitigation, and rural livelihood enhancement (Gliessman, 2007).

Research Methodology

This study is primarily based on secondary data related to the Vasmee factory and later to MFF. Primary data were collected through key informant discussions with the management of MFF, including the General Manager, Operational Manager, Farm Manager, and Marketing Manager of the farm.

The research variables include SWOT and TOWS analyses related to the farm's location, strategies, action plans, and progress. This study is divided into two main sections: the first section presents the results of the feasibility analysis conducted for this abandoned land before its establishment as MFF, and the second section focuses on the current progress of MFF in line with sustainable ecological principles.

The restoration process involves converting 12 acres of farmland into a sustainable agroecosystem, emphasizing the cultivation of diverse fruit tree crops such as Rambutan, mango, pepper, and other tropical fruit varieties. Additionally, primary crop coconut cultivation will be integrated with companion plants such as spices (cinnamon, pepper, turmeric, ginger), tropical fruits, and vegetables to enhance biodiversity and ensure ecological resilience. Innovative technologies and environmentally friendly practices will be employed to sustain production and increase efficiency. The following Figure 1 shows the current MFF site map, which represents the different zones of the farm.

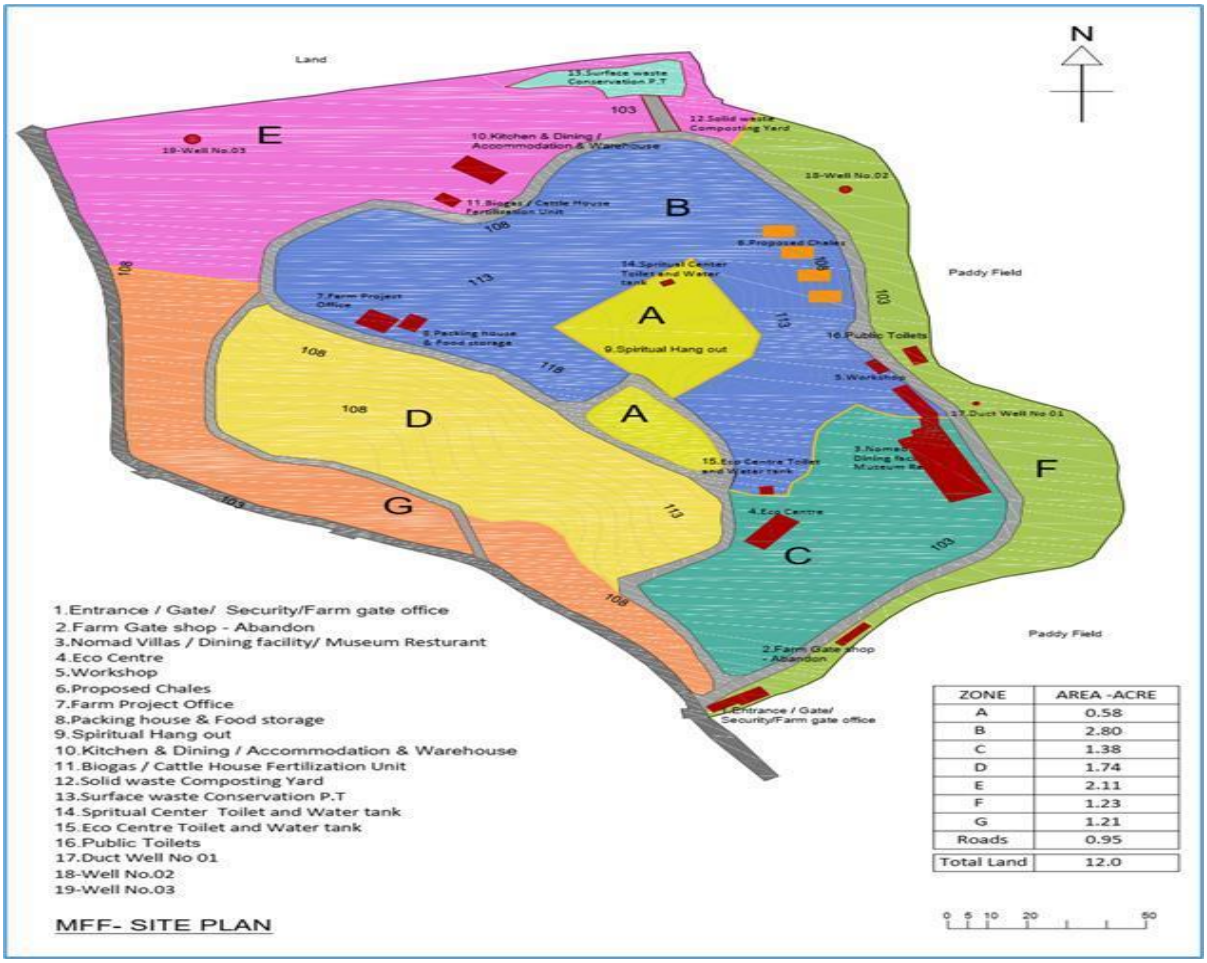

Figure 01: MFF land zoning map,2022

Evolution of the sustainable fruit farm concept

Vasee Founder aimed to Setting up a fruit farm and exploring mechanisms to promote rural fruit crop marketing in the South region using a neglected coconut land which had been discovered on June 9, 1996. Due to its strategic location and the primary crop being coconut, it became as the project site. Moreover, at that time this coconut land has been used only 30% of land for farming.

Based on this concept, Vasmee Commenced in November/December 1997, with the Farm Gate Processing unit starting in May 1998. In 1999/2000 continued gruelling work on farmland and production processing, along with market initiatives focusing on eco-friendly ideas of "Eco fruit farming with a difference."

After the dormancy period of the *Vasee-Midigama,* new management restart the revolution of the new journey. New management recruited the intern students from the Faculty of Agriculture, University of Ruhuna. Initially, intern students with the help of former management, present management and present workers prepared the SWOT matrix to identify internal strengths and weakness of this land to develop as an Ecological farm and evaluate external threats and opportunities to develop this abundant land as a farm business.

Table 01: SWOT analysis for MFF development process

Strengths	**Weakness**
1. Existence of unexploited rich natural resources. 2. Relatively well preserved and diverse natural environment 3. Sufficient labour availability and low labour cost. 4. Location of the farm at the centre of tourist hub in southern region. 5. Favourable agro ecological climatic condition 6. Legal land ownership. 7. Adequate resource availability for organic farming. 8. Government and institutional support. 9. Reputation of the former “Vasmee Brand”.	1. Low fertility level of the land 2. Unavailability of farm related data and information 3. Cost of transportation due to geographical location from main road 4. Inadequate water management practices 5. Inadequate soil conservation and management practices 6. Absence of marking plan 7. Absence of waste management system 8. Lack of product quality standards 9. Lack of adequate farm equipment and machinery 10. Poor agronomic practices 11. Lack of proper harvesting calendar 12. Poorly designed business environment 13. Irregular cropping pattern

10. Already existing valuable conventional practices 11. Financial capability of new management 12. High entrepreneurial skills and knowledge of innovation 13. Multi-cropping system under primary coconut cultivation **14.** Community involvement/interventions	14. Poor infrastructure facilities 15. Poor business performances 16. Lack of clear road sign and maps for land
Opportunities 1. proximity to the famous surfing beach in *Midigama* 2. Lack of competitors 3. Food crisis and economic crisis improves the trend in agribusiness 4. Increasing commitment to sustainable development goals 5. Unemployed community around land 6. Availability of skilled professionals in close proximity 7. Favourable attitudes of younger generation towards agribusiness 8. New technologies for higher productivity 9. R&D opportunities due to University of Ruhuna, and other research institutes 10. Growing demand for horticultural products locally and globally 11. National policy supports for sustainable agriculture development 12. Present of certificate to organic products	**Threats** 1. Economic crisis of the county and subsequent impact to business 2. Community beliefs and expectations towards new business ventures 3. Unpredictable weather patterns 4. Fluctuation in market prices 5. Increasing and cumulative pressure on diversity 6. Persistent pest and disease issues

Source: Intern reports, MFF, 2022

As SWOT matrix explain the internal and external environment of MFF to develop as an agro ecological farm and tourism destinations, subsequently TWOS (Threat, Weaknesses, Opportunity, Strength) matrix was developed with the strategies to develop this abundant land into productive agro ecological destinations. Table 02 shows those strategies have been identified by this internship group to propose farm management to implement for their business plans.

Table 02: TWOS analysis for MFF development process

SO strategies	**WO strategies**
1. Establish a farm gate processing centre 2. Develop into agro-tourism enterprises 3. Offering agro-tech services 4. Production of affordable value-added products **5.** Introduce fruits that are not currently commercially grown in the farm land	1. Introducing a new unique product range to attract foreign customers 2. Use of genetically improved seeds and crops 3. Incorporating green and eco business strategies 4. Promote value added product sales through farm outlet. 5. Obtain quality certificate 6. Implement soil conservation practices 7. Establishment of sign maps and directions boards 8. Use electronic data management practices
ST strategies	**WT strategies**
1. Maintain strong community relationship and incorporate CSR projects 2. Application of climate smart agricultural practices 3. Application of sustainable farming practices. **4.** Practices ecological pest and disease control management practices	1. Development of integrated agribusiness model 2. Establishment of protected house 3. Market identification and development of strategic marketing plan

Source: Intern reports, MFF, 2022

Restoration of MFF under ecological principles

After screening the SWOT and TOWS matrix results, MFF was bloomed using few main strategical pillars. The first strategy was to initiate ecological agricultural practices and it has divided into 2 main phases; Stage 01 (2 years 2023 & 2024) and Stage 02 (5 years 2025 to 2030). During stage 1 and 2, phases, they targeted two main value creation strategies; provision of agro- training facilities and Agri-based tourism activities. Midigama Fruit Farm (MFF) aims to establish its brand in the fresh fruit and value-added products market by utilizing its own produce. Additionally, the farm seeks to strengthen its position in the fresh fruit market.

Importantly, MFF new management macro vision looked at biodiversity protection on a broader scale along with the community based approaches to promote food security and economic related benefits. Therefore, MFF has launched an integrated approach towards collaborations which calls for strong preference for multi-disciplinary project at the traditional village of Midigama. Known as "Midigama Eco Village".

Two main ecological practices are currently performed by MFF. Ecological approaches include organic farming, nursery management and bee keeping. Moreover, MFF has achieved remarkable progress in the tourism industry promoting agro ecological spirit to local and foreign nature lovers. Apart from that, training and workshops facilitated by MFF contribute as the key pillars of the sustainable business development.

MFF cater for long stay (1-4 weeks) trainings and short trainings or workshops (1-2 days) including lodging in same eco premises of the farm land. Moreover, they Facilitate sustainable food kitchen sourced ingredients from farm premises. In farm tour activities, MFF facilitates various demonstrations such as custom made / Bespoke Agricultural training facility provider (Ex: Preparation composts, Ecological pest control applications, pruning of trees, Bee keeping, etc) to demonstrate their farming activities to the visitors. In addition, MFF conduct workshop type educational awareness programme for school children and provide fully fledge hands-on Agri trainings for families and focus groups/corporates. Further, MFF provides ecological education through Hi-tech self-tree identification software application for school children.

Conclusion

The revitalization of Midigama Fruit Farm represents a significant shift toward sustainable agricultural development, emphasizing ecological sustainability, community engagement, and economic resilience. Through strategic planning, innovation, and collaboration, MFF has successfully overcome past operational challenges and redefined its role as a model agro-ecological destination in Sri Lanka. The findings highlight that integrating ecological farming, agro-tourism, and sustainable business strategies enhances both environmental conservation and economic viability. Moving forward, continued investment in research, infrastructure, and market development will be essential to maximize the farm's potential as a sustainable agro-tourism hub. Strengthening policy support, fostering community collaboration, and enhancing marketing strategies will further solidify MFF's role as a leader in ecological agriculture and rural development. Ultimately, MFF's transition demonstrates the transformative potential of agro-tourism in sustaining agricultural enterprises while promoting environmental and socio-economic benefits.

Recommendations

This study can recommend to MFF to strengthen their community Engagement by fostering closer collaboration with local communities to ensure their participation in farm activities, decision- making processes, and equitable distribution of benefits. Implement community-based initiatives such as farmer cooperatives, training programs, and revenue-sharing mechanisms can be applied to enhance social cohesion and support sustainable development.

Invest in research and development to identify innovative solutions for enhancing agricultural productivity, biodiversity conservation, and environmental sustainability is also can recommended to MFF. Collaboration with academic institutions, research organizations, and government agencies to leverage scientific expertise, technological advancements, and best practices in sustainable agriculture would be possible strategies to enhance research and development at MFF.

Develop strategic partnerships with agribusinesses, retailers, and tourism operators to expand market access for farm products and value-added offerings would be an another recommendation for MFF. Invest in branding, packaging, and marketing strategies to differentiate farm products, attract premium prices, and capitalize on emerging consumer trends towards organic and sustainable products are possible activities under these strategies.

Policy Implications

Government agencies should prioritize the development of agro-tourism infrastructure, marketing campaigns, and regulatory frameworks to support the growth of agro-tourism enterprises. This includes establishing guidelines for farm accommodation, eco-tours, and cultural experiences, as

well as providing financial assistance and incentives for agro-tourism startups and investments. Further, policymakers should enact policies that promote sustainable agricultural practices, soil conservation, water management, and biodiversity conservation in tourism industry in Sri Lanka.

List of References

Bramwell, B., & Lane, B. (2011). Critical research on the governance of tourism and sustainability. Journal of Sustainable Tourism, 19(4-5), 411-421.

Font, X. (2002). Environmental certification in tourism and hospitality: Progress, process and prospects. Tourism Management, 23(3), 197-205.

Gliessman, S. R. (2007). Agroecology: The ecology of sustainable food systems. CRC Press.

Hall, D., & Kirkpatrick, I. (2019). Rural tourism: Experiences and enterprise. Channel View Publications.

Internship reports, (2022) , unpublished, Midigama fruit farm, Midigama

Lehto, Xinran Y., Sally Brown, Yi Chen, and Alastair M. Morrison. "Yoga Tourism as a Niche Within the Wellness Tourism Market." Tourism Recreation Research 31, no. 1 (2006): 25-35. doi:10.1080/02508281.2006.11081244.

Pretty, J., Toulmin, C., & Williams, S. (2006). Sustainable intensification in African agriculture. International Journal of Agricultural Sustainability, 4(2), 163-188.

Reed, D. (2008). Tourism, biodiversity and sustainable development: What can't be ignored in the tropics. Oryx, 42(2), 176-177.

ViKirillova, Ksenia, Xinran Lehto, and Liping Cai., (2016), *Tourism and Existential Transformation:* An Empirical Investigation. Journal of Travel Research 56, no. 5 (2016): 638-50. doi:10.1177/0047287516650277.

Voigt, Cornelia, Graham Brown, and Gary Howat, 2011, *Wellness Tourists: In Search of Transformation.* Tourism Review 66, no. 1/2 (2011): 16-30. doi:10.1108/16605371111127206.

Wezel, A., Casagrande, M., Celette, F., Vian, J. F., Ferrer, A., Peigné, J., ... & Aguilera, E. (2009). Agroecological practices for sustainable agriculture: A review. Agronomy for Sustainable Development, 29(1), 43-55.