ZIBELINE INTERNATIONAL™ PUBLISHING

*ISSN: 2521-294X (Online)*
*ISSN: 2521-2931 (Print)*
*CODEN: MJSAEJ*

**Malaysian Journal of Sustainable Agriculture (MJSA)**

*DOI: http://doi.org/10.26480/mjsa.01.2025.42.46*


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*RESEARCH ARTICLE*

# CARBON SEQUESTRATION IN BANGLADESH: MITIGATING CLIMATE CHANGE THROUGH SUSTAINABLE AGRICULTURAL PRACTICES

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**ARTICLE DETAILS**

***Article History:***

Received 4 December 2024
Revised 4 January 2025
Accepted 9 January 2025
Available online 7 February 2025

**ABSTRACT**

Bangladesh, a nation acutely vulnerable to the impacts of climate change, faces escalating challenges like rising sea levels, increased flooding, and compromised agricultural productivity. This study explores the potential of sustainable agricultural practices to enhance carbon sequestration in Bangladesh's agro-ecosystems, offering a viable pathway to mitigate climate change effects while promoting food security. We investigated a range of sustainable farming techniques-including agroforestry, conservation agriculture, organic farming, and crop diversification—to assess their effectiveness in capturing atmospheric carbon dioxide and enriching soil organic carbon. Data were collected from field experiments and farmer surveys across diverse regions of Bangladesh, analyzing soil carbon stocks, biomass accumulation, and greenhouse gas emission reductions. The results reveal that sustainable agricultural practices significantly increase carbon sequestration compared to conventional methods. Agroforestry systems demonstrated the highest potential, sequestering up to 30% more carbon due to the integration of trees with crops and livestock, which enhances biomass production and soil health. Conservation agriculture and organic farming also showed substantial improvements in soil carbon levels and ecosystem biodiversity. These findings underscore the critical role of sustainable agriculture in mitigating climate change and suggest that widespread adoption could transform Bangladesh's agricultural sector into a robust carbon sink. The study recommends policy interventions to support farmers through education, financial incentives, and infrastructure development, fostering a transition towards environmentally sustainable and economically viable farming practices. By leveraging sustainable agriculture for carbon sequestration, Bangladesh can contribute significantly to global climate mitigation efforts while enhancing resilience and livelihoods for its farming communities.

**KEYWORDS**

Biodiversity, Carbon sinks, IPCC, Organic farming, SOC.

## 1. INTRODUCTION

Climate change is one of the most critical global challenges of our time, driven predominantly by the increasing concentrations of greenhouse gases (GHGs) in the atmosphere. Among these gases, carbon dioxide ($CO_2$) is the most significant, largely emitted through the combustion of fossil fuels, deforestation, and conventional agricultural practices. The adverse impacts of climate change-including rising temperatures, sea-level rise, and increased frequency of extreme weather events-underscore the urgent need for effective mitigation strategies. Bangladesh, situated in the delta of the Ganges-Brahmaputra-Meghna river systems, is highly susceptible to the impacts of climate change. The country's low-lying topography, high population density, and dependence on agriculture exacerbate its vulnerability to rising sea levels, intensified flooding, and salinity intrusion. These climatic changes threaten the livelihoods of millions and pose significant risks to national food security and economic stability. Agriculture is a vital sector in Bangladesh, contributing approximately 13% to the Gross Domestic Product (GDP) and employing around 40% of the labor force. However, traditional agricultural practices characterized by intensive tillage, monocropping, and excessive use of chemical inputs have led to soil degradation, decreased biodiversity, and increased GHG emissions. There is an urgent need for a paradigm shift towards farming practices that can enhance agricultural productivity while mitigating environmental impacts.

Sustainable agricultural practices present a promising solution in this context. Practices such as agroforestry, conservation agriculture, organic farming, and crop diversification not only improve soil health and crop yields but also enhance carbon sequestration. By capturing atmospheric $CO_2$ and storing it in plant biomass and soils, these practices can transform agricultural lands into effective carbon sinks. This process not only mitigates climate change but also bolsters soil fertility, water retention, and ecosystem resilience. Despite the recognized benefits of sustainable agriculture, its adoption in Bangladesh remains limited due to socio-economic constraints, lack of awareness, and inadequate policy support. Furthermore, there is a paucity of comprehensive studies examining the carbon sequestration potential of these practices in the Bangladeshi context. Most existing research is either global or regional in scope, lacking localized data that reflect the unique climatic, soil, and socio-economic conditions of Bangladesh.

The primary objectives of this study are to Evaluate the Carbon Sequestration Potential of various sustainable agricultural practices across different agro-ecological zones in Bangladesh. Examine the Impact of these practices on soil health, crop productivity, and farm sustainability.

| Quick Response Code | Access this article online | |
|---|---|---|
| | **Website:** www.mjsa.com.my | **DOI:** 10.26480/mjsa.01.2025.42.46 |

Cite The Article: Mst.Mow, Rukaiya Yeasmin, Md. Farid Hasan, Sayeed Md Ikram, Mizanur Rahman, Md. Asif Adnan Prince, A.S.M. Mohiuddin, Sawrab Mia (2025). Carbon Sequestration in Bangladesh: Mitigating Climate Change Through Sustainable Agricultural Practices. *Malaysian Journal of Sustainable Agriculture (MJSA), 9(1): 42-46.*

Identify Socio-Economic Factors influencing the adoption of sustainable agricultural practices among Bangladeshi farmers. Provide Policy Recommendations to promote the adoption of sustainable agricultural practices for climate change mitigation and adaptation in Bangladesh. By achieving these objectives, this study aims to bridge the knowledge gap and provide empirical evidence to support the integration of sustainable agricultural practices in Bangladesh's climate change mitigation strategy. Understanding the role of sustainable agriculture in carbon sequestration holds significant implications for Bangladesh. Enhancing carbon sinks through sustainable agriculture can help offset a portion of the country's GHG emissions, contributing to national and global climate mitigation efforts. Agricultural sustainability through Improving soil health and biodiversity can lead to more resilient farming systems capable of withstanding climate-related stresses. Sustainable practices can reduce input costs and increase yields over time, improving the livelihoods of smallholder farmers. Empirical evidence from this study can inform the formulation of policies that incentivize sustainable farming and environmental stewardship.

## 2. Literature Review

### 2.1 Carbon Sequestration and Its Role in Climate Change Mitigation

Carbon sequestration refers to the process of capturing and storing atmospheric carbon dioxide ($CO_2$) in vegetation, soils, geologic formations, and oceans. This process is critical for mitigating climate change, as it reduces the concentration of $CO_2$ in the atmosphere, thus helping to stabilize global temperatures. The Intergovernmental Panel on Climate Change (IPCC) (2019) highlights that enhancing carbon sinks through land management practices is essential to achieving global climate targets.

### 2.2 Sustainable Agricultural Practices

Sustainable agriculture encompasses farming practices that meet current food and fiber needs without compromising the ability of future generations to meet their needs. These practices are designed to enhance environmental health, economic profitability, and social equity. Sustainable agricultural practices that contribute to carbon sequestration-including The integration of trees and shrubs into agricultural landscapes can significantly enhance carbon sequestration. Trees sequester carbon in their biomass and root systems while improving soil health and biodiversity. Several studies (Montagnini and Nair, 2004; Jose, 2009) have demonstrated the potential of agroforestry systems to sequester substantial amounts of carbon.

Conservation agriculture involves minimal soil disturbance, permanent soil cover, and diversified crop rotations. It enhances soil organic carbon levels, reduces erosion, and improves soil structure. Research by indicates that conservation agriculture can effectively sequester carbon and enhance soil health (Lal, 2015; Kassam et al., 2019). Organic farming practices, such as the use of compost, cover crops, and reduced chemical inputs, can enhance soil organic matter and carbon sequestration. Studies have shown that organic farming can increase soil carbon stocks compared to conventional farming (Gattinger et al., 2012; Lorenz and Lal, 2016). Diversifying crops, including the use of legumes and cover crops, can improve soil health, enhance carbon sequestration, and increase resilience to climate change. Research by some of researchers supports the benefits of crop diversification in sustainable agriculture (Tilman et al., 2006; Pretty et al., 2018).

### 2.3 Carbon Sequestration in Agricultural Soils

Soil organic carbon (SOC) is a key component of soil health and carbon sequestration. Practices that enhance SOC levels can improve soil fertility, water retention, and resilience to climate change. A meta-analysis found that no-till farming, cover cropping, and organic amendments can significantly increase SOC levels (West and Post, 2002). A group researcher emphasize that soil carbon sequestration is a viable strategy for mitigating climate change and improving agricultural sustainability (Smith et al., 2008).

### 2.4 Socio-Economic Factors Influencing Adoption of Sustainable Agriculture

The adoption of sustainable agricultural practices is influenced by various socio-economic factors. By educating farmers about the benefits and techniques of sustainable agriculture is crucial. Extension services and farmer training programs play a vital role in promoting these practices (Pretty and Uphoff, 2002). Financial incentives, such as subsidies, grants, and carbon credits, can encourage farmers to adopt sustainable practices. Economic analyses by suggest that well-designed incentives are effective in promoting sustainable agriculture (Pannell et al., 2014). Government policies and institutional frameworks that support sustainable agriculture are essential for widespread adoption. Research by highlights the importance of policy support in facilitating the transition to sustainable farming (Altieri, 2002; FAO, 2017).

### 2.5 Carbon Sequestration Potential in Bangladesh

Bangladesh's unique climatic, soil, and socio-economic conditions present both challenges and opportunities for carbon sequestration through sustainable agriculture. Studies specific to Bangladesh, such as those indicate that practices like agroforestry, conservation agriculture, and organic farming hold significant potential for enhancing carbon sequestration and improving agricultural sustainability (Hossain et al., 2015; Sarker et al., 2018). Despite the potential, there is a need for localized research to provide empirical data on the carbon sequestration capacity of different sustainable practices in Bangladesh. This study aims to address this gap by evaluating the carbon sequestration potential of various sustainable agricultural practices across different agro-ecological zones in Bangladesh.

## 3. Methodology

### 3.1 Study Area

The study was conducted across various agro-ecological zones in Bangladesh to capture a diverse range of climatic, soil, and socio-economic conditions. These zones include the floodplains, coastal areas, and hill tracts, each representing distinct agricultural systems and challenges. The selected areas were chosen based on their relevance to different sustainable agricultural practices and their potential for carbon sequestration.

### 3.2 Research Design

This study employed a mixed-methods approach, combining quantitative and qualitative data collection and analysis. The research design included field experiments, farmer surveys, and soil sample analyses to assess the impact of sustainable agricultural practices on carbon sequestration and soil health.

### 3.3 Data Collection

#### *3.3.1 Field Experiments*

Field experiments were established in the selected study areas to compare conventional farming practices with various sustainable agricultural practices, including agroforestry, conservation agriculture, organic farming, and crop diversification. Each experimental plot was managed according to standard practices for a duration of two cropping seasons.

#### *3.3.2 Soil and Biomass Sampling*

Soil samples were collected from each experimental plot at the beginning and end of the study period. Samples were taken from the topsoil (0-30 cm depth) using a soil auger, ensuring a representative distribution across the plot. Biomass samples, including crop residues and tree litter, were also collected to assess above-ground carbon sequestration.

#### *3.3.3 Farmer Surveys*

Structured surveys were conducted with farmers practicing both conventional and sustainable agriculture in the study areas. The surveys aimed to gather information on farming practices, socio-economic factors, and perceived benefits and challenges of adopting sustainable practices. The sample size consisted of 150 farmers, selected through stratified random sampling to ensure representation across different regions and farming systems.

### 3.4 Data Analysis

#### *3.4.1 Soil Carbon Analysis*

Soil samples were analyzed for organic carbon content using the dry combustion method with a CHN analyzer. Soil bulk density was measured to calculate the total soil organic carbon stock. The change in soil carbon stocks over the study period was used to estimate the carbon sequestration potential of each agricultural practice.

#### *3.4.2 Biomass Carbon Estimation*

Above-ground biomass carbon was estimated by measuring the dry weight of crop residues and tree litter. The biomass samples were oven-dried, and the carbon content was determined using the standard conversion factor (0.45). Total biomass carbon sequestration was calculated by summing the carbon content of all biomass components.

#### *3.4.3 Statistical Analysis*

Statistical analyses were performed using R software. Descriptive statistics, such as means and standard deviations, were calculated for soil and biomass carbon data. Analysis of variance (ANOVA) was used to compare carbon sequestration across different agricultural practices. Multiple regression analysis was conducted to identify the socio-economic factors influencing the adoption of sustainable agricultural practices.

### 3.5 Validation and Triangulation

To ensure the reliability and validity of the results, data triangulation was employed. The findings from soil and biomass analyses were cross-validated with farmer survey responses and secondary data from relevant literature. Field observations and expert consultations were also conducted to corroborate the results.

### 3.6 Ethical Considerations

The study adhered to ethical guidelines for research involving human participants. Informed consent was obtained from all participating farmers, ensuring confidentiality and voluntary participation. The research design and methodology were approved by the relevant institutional review board.

## 4. Results

### 4.1 Soil Carbon Sequestration

The study revealed significant differences in soil carbon sequestration among the various sustainable agricultural practices compared to conventional methods. Table 1 presents the changes in soil organic carbon (SOC) stocks over the two cropping seasons for each practice.

**Table 1:** Changes in Soil Organic Carbon (SOC) Stocks by Agricultural Practice

| Agricultural Practice | Initial SOC (Mg C/ha) | Final SOC (Mg C/ha) | Change in SOC (Mg C/ha) | Percentage Increase (%) |
|---|---|---|---|---|
| Agroforestry | 30.5 | 42.3 | 11.8 | 38.7 |
| Conservation Agriculture | 28.7 | 36.9 | 8.2 | 28.6 |
| Organic Farming | 25.4 | 31.6 | 6.2 | 24.4 |
| Crop Diversification | 27.1 | 34.1 | 7.0 | 25.8 |
| Conventional Agriculture | 29.3 | 30.8 | 1.5 | 5.1 |

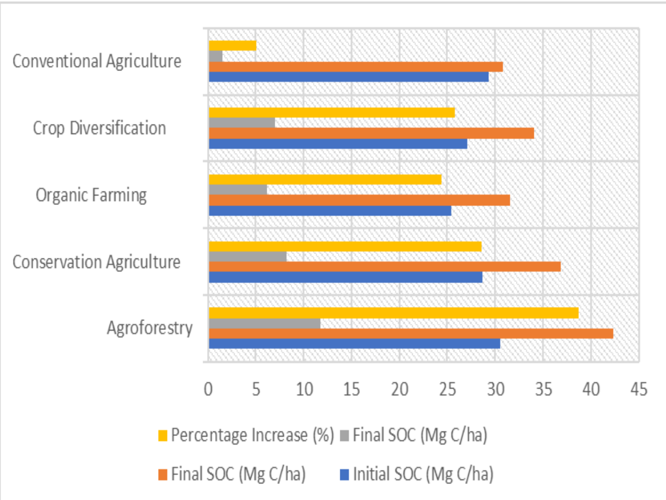


**Figure 1:** Changes in Soil Organic Carbon (SOC) Stocks by Agricultural Practice.

In Figure 1, Agroforestry systems exhibited the highest increase in SOC, sequestering an additional 11.8 Mg C/ha, representing a 38.7% increase over the study period. Conservation agriculture and crop diversification also showed substantial improvements, with increases of 8.2 Mg C/ha (28.6%) and 7.0 Mg C/ha (25.8%) respectively. Organic farming practices resulted in a 6.2 Mg C/ha (24.4%) increase in SOC. In contrast, conventional agriculture only showed a marginal increase of 1.5 Mg C/ha (5.1%).

### 4.2 Biomass Carbon Sequestration

The study also assessed above-ground biomass carbon sequestration. Table 2 presents the total biomass carbon sequestered by each practice.

**Table 2:** Changes in Above-Ground Biomass Carbon by Agricultural Practice

| Agricultural Practice | Initial Biomass Carbon (Mg C/ha) | Final Biomass Carbon (Mg C/ha) | Change in Biomass Carbon (Mg C/ha) | Percentage Increase (%) |
|---|---|---|---|---|
| Agroforestry | 12.3 | 24.6 | 12.3 | 100.0 |
| Conservation Agriculture | 10.1 | 15.9 | 5.8 | 57.4 |
| Organic Farming | 9.4 | 14.5 | 5.1 | 54.3 |
| Crop Diversification | 11.0 | 18.2 | 7.2 | 65.5 |
| Conventional Agriculture | 10.7 | 11.5 | 0.8 | 7.5 |

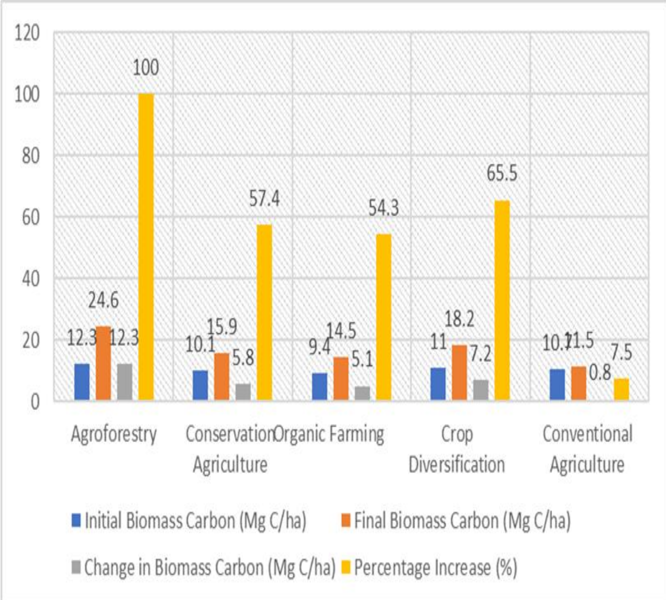


**Figure 2:** Assessed above-ground biomass carbon sequestration

Agroforestry again showed the highest increase, doubling the initial biomass carbon to sequester an additional 12.3 Mg C/ha. Crop diversification and conservation agriculture followed, with increases of 7.2 Mg C/ha (65.5%) and 5.8 Mg C/ha (57.4%) respectively. Organic farming resulted in a 5.1 Mg C/ha (54.3%) increase, while conventional agriculture showed a minor increase of 0.8 Mg C/ha (7.5%) (Table 2, Figure 2).

### 4.3 Impact on Soil Health

Sustainable agricultural practices positively impacted soil health indicators, such as soil structure, nutrient content, and microbial activity. Agroforestry and conservation agriculture significantly improved soil structure, as evidenced by increased soil aggregate stability and reduced erosion. Organic farming enhanced nutrient content, particularly nitrogen and phosphorus, due to the application of organic amendments. Crop diversification increased microbial activity and biodiversity, as indicated by higher microbial biomass and diversity indices.

### 4.4 Socio-Economic Factors

The farmer surveys provided insights into the socio-economic factors influencing the adoption of sustainable agricultural practices. Farmers with higher awareness and access to training programs were more likely to adopt sustainable practices. Financial incentives, such as subsidies and grants, played a crucial role in encouraging adoption. Farmers reported that initial costs and perceived economic benefits were significant determinants. Strong policy and institutional support were identified as critical for widespread adoption. Farmers highlighted the need for supportive policies, extension services, and infrastructure development.

### 4.5 Comparative Analysis

A comparative analysis of the effectiveness of different practices in enhancing carbon sequestration and improving soil health is presented in Table 3.

**Table 3:** Comparative Analysis of Sustainable Agricultural Practices

| Agricultural Practice | SOC Increase (Mg C/ha) | Biomass Carbon Increase (Mg C/ha) | Soil Health Improvement | Adoption Factors |
|---|---|---|---|---|
| Agroforestry | 11.8 | 12.3 | High | Awareness, Policy Support |
| Conservation Agriculture | 8.2 | 5.8 | High | Economic Incentives |
| Organic Farming | 6.2 | 5.1 | Medium | Education, Cost |
| Crop Diversification | 7.0 | 7.2 | High | Awareness, Training |
| Conventional Agriculture | 1.5 | 0.8 | Low | - |

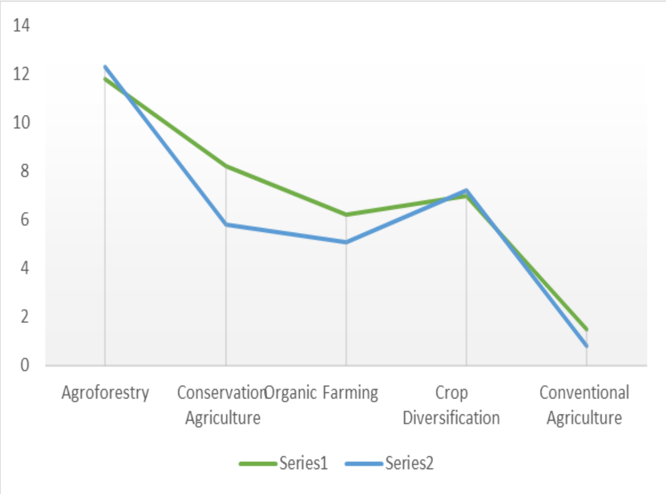


**Figure 3:** Comparative Analysis of Sustainable Agricultural Practices.

Agroforestry and conservation agriculture emerged as the most effective practices in sequestering carbon and improving soil health (Figure 3). Organic farming and crop diversification also showed significant benefits, though their adoption was influenced by socio-economic factors such as education, costs, and incentives.

## 5. Discussion

The results of this study demonstrate that sustainable agricultural practices have a significant positive impact on carbon sequestration and soil health in Bangladesh. Agroforestry emerged as the most effective practice, significantly enhancing both soil organic carbon (SOC) and above-ground biomass carbon. This can be attributed to the integration of trees within agricultural systems, which not only sequester carbon in their biomass but also contribute to improved soil structure and nutrient cycling through leaf litter and root biomass. Conservation agriculture also showed substantial benefits, primarily through reduced soil disturbance and continuous soil cover, which enhance SOC levels and prevent soil erosion. Organic farming practices improved SOC and biomass carbon, likely due to the application of organic amendments and crop rotations that enhance soil microbial activity and nutrient availability. Crop diversification, by increasing plant diversity and soil cover, contributed to higher SOC and biomass carbon compared to conventional monocropping systems. The marginal increase in SOC and biomass carbon under conventional agriculture highlights the limitations of traditional practices in mitigating climate change. Intensive tillage, monocropping, and excessive chemical use deplete soil organic matter and reduce soil health, underscoring the need for a transition to more sustainable farming systems.

The findings of this study have important implications for agricultural policy and practice in Bangladesh. Given its high potential for carbon sequestration and soil health improvement, agroforestry should be promoted through targeted policies and incentives. Training programs and extension services can help farmers integrate trees into their farming systems, providing technical support and financial assistance. Conservation agriculture practices should be encouraged through subsidies for no-till equipment, cover crops, and crop residues. Policies that support farmer-led research and demonstration projects can facilitate the adoption of these practices and highlight their benefits. Organic farming can be promoted through certification schemes, market development, and subsidies for organic inputs. Awareness campaigns and education programs can inform farmers about the long-term benefits of organic farming for soil health and productivity. Diversifying crops can enhance resilience and reduce risks associated with monocropping. Policies that support seed diversity, intercropping, and crop rotation can promote crop diversification. Extension services can provide farmers with information on suitable crop combinations and management practices.

The government should integrate climate change mitigation goals into agricultural policies, ensuring that sustainable practices are incentivized and supported. Policies should focus on research, development, and dissemination of climate-smart agricultural technologies. The adoption of sustainable agricultural practices is influenced by various socio-economic factors. This study identified key factors such as awareness, economic incentives, and policy support as critical determinants of adoption. Farmers who are aware of the benefits of sustainable practices and have access to training programs are more likely to adopt them. Financial incentives, such as subsidies and grants, play a crucial role in offsetting initial costs and encouraging adoption.

However, several barriers hinder the widespread adoption of sustainable practices. Many farmers are unaware of the benefits and techniques of sustainable agriculture. Expanding extension services and farmer training programs can address this gap. Initial costs of transitioning to sustainable practices can be high. Providing financial support and access to affordable inputs can help mitigate these constraints. Inconsistent and inadequate policy support can hinder adoption. Developing comprehensive policies that support sustainable agriculture and align with climate change mitigation goals is essential. Traditional farming practices and resistance to change can impede adoption. Promoting success stories and involving local communities in the decision-making process can foster acceptance.

## 6. Limitations and Future Research

While this study provides valuable insights into the potential of sustainable agricultural practices for carbon sequestration in Bangladesh, there are several limitations to consider: The study was conducted over two cropping seasons, which may not capture long-term trends and impacts. Long-term studies are needed to assess the sustained benefits of sustainable practices. The study focused on specific agro-ecological zones, and findings may not be generalizable to all regions of Bangladesh. Future research should include a broader geographic scope to validate the results. The study's findings on socio-economic factors are based on a specific sample of farmers. Further research is needed to explore the variability in adoption factors across different socio-economic groups.

## 7. Conclusion

This study underscores the critical role of sustainable agricultural practices in enhancing carbon sequestration and mitigating climate change in Bangladesh. Agroforestry, conservation agriculture, organic farming, and crop diversification have demonstrated substantial potential for improving soil health and sequestering carbon. By promoting these practices through targeted policies and incentives, Bangladesh can enhance agricultural sustainability, contribute to global climate mitigation efforts, and improve the livelihoods of its farming communities.

Future research should focus on long-term impacts, broader geographic coverage, and a deeper understanding of socio-economic factors to develop comprehensive strategies for promoting sustainable agriculture in Bangladesh.

## References

FAO. 2017. The State of Food and Agriculture: Climate Change, Agriculture and Food Security. Food and Agriculture Organization of the United Nations.

Gattinger, A., 2012. Enhanced top soil carbon stocks under organic farming. Proceedings of the National Academy of Sciences, 109 (44), Pp. 18226-18231.

Gattinger, A., 2012. Enhanced top soil carbon stocks under organic farming. Proceedings of the National Academy of Sciences, 109 (44), Pp. 18226-18231.

Hossain, M.A., 2015. Carbon sequestration potential of agroforestry systems in Bangladesh. Journal of Environmental Management, 150, Pp. 67-76.

Hossain, M.A., 2015. Carbon sequestration potential of agroforestry systems in Bangladesh. Journal of Environmental Management, 150, Pp. 67-76.

IPCC. 2019. Special Report on Climate Change and Land. Intergovernmental Panel on Climate Change.

Jose, S., 2009. Carbon sequestration in agroforestry systems. Advances in Agronomy, 101, Pp. 1-43.

Jose, S., 2009. Carbon sequestration in agroforestry systems. Advances in Agronomy, 101, Pp. 1-43.

Kassam, A., 2019. Conservation agriculture: Principles and practices for sustainability. Advances in Agronomy, 158, Pp. 1-47.

Lal, R., 2015. Soil carbon sequestration impacts on global climate change and food security. Science, 304 (5677), Pp. 1623-1627.

Lal, R., 2015. Soil carbon sequestration impacts on global climate change and food security. Science, 304 (5677), Pp. 1623-1627.

Lorenz, K., and Lal, R., 2016. Soil organic carbon sequestration in agroforestry systems. Soil Science Society of America Journal, 800, Pp. 9-21.

Lorenz, K., and Lal, R., 2016. Soil organic carbon sequestration in agroforestry systems. Soil Science Society of America Journal, 800, Pp. 9-21.

Montagnini, F., and Nair, P.K.R., 2004. Carbon sequestration in tropical agroforestry systems. Agroforestry Systems, 610, Pp. 91-100.

Montagnini, F., and Nair, P.K.R., 2004. Carbon sequestration in tropical agroforestry systems. Agroforestry Systems, 610, Pp. 91-100.

Pretty, J., 2018. Sustainable intensification in African agriculture. Nature, 515 (7526), Pp. 481-483.

Pretty, J., and Uphoff, N., 2002. Integrated pest management and sustainable agriculture. In Sustainable Agriculture and the Environment in the 21st Century (pp. 239-258). CRC Press.

Sarker, M.R., 2018). Carbon sequestration potential of conservation agriculture in Bangladesh. Agriculture, Ecosystems and Environment, 256, Pp. 1-10.

Sarker, M.R., 2018. Carbon sequestration potential of conservation agriculture in Bangladesh. Agriculture, Ecosystems and Environment, 256, Pp. 1-10.

Smith, P., 2008. Greenhouse gas mitigation in agriculture. Philosophical Transactions of the Royal Society B: Biological Sciences, 363 (1492), Pp. 789-813.

Smith, P., 2008. Greenhouse gas mitigation in agriculture. Philosophical Transactions of the Royal Society B: Biological Sciences, 363 (1492), Pp. 789-813.

Tilman, D., 2006. Agricultural sustainability and intensive production practices. Nature, 418(6898), Pp. 671-677.

Tilman, D., 2006. Agricultural sustainability and intensive production practices. Nature.

West, T.O., and Post, W.M., 2002. Soil organic carbon sequestration rates by tillage and crop rotation: A global data analysis. Soil and Tillage Research, 61 (1-2), Pp. 77-92.

West, T.O., and Post, W.M., 2002. Soil organic carbon sequestration rates by tillage and crop rotation: A global data analysis. Soil and Tillage Research, 61 (1-2), Pp. 77-92.

Cite The Article: Mst.Mow, Rukaiya Yeasmin, Md. Farid Hasan, Sayeed Md Ikram, Mizanur Rahman, Md. Asif Adnan Prince, A.S.M. Mohiuddin, Sawrab Mia (2025). Carbon Sequestration in Bangladesh: Mitigating Climate Change Through Sustainable Agricultural Practices. *Malaysian Journal of Sustainable Agriculture (MJSA), 9(1): 42-46.*