Abstract

The Green Revolution, which entails the use of pesticides, fertilisers, and other agrochemicals, has greatly increased worldwide food production in the last sixty years. Nevertheless, this heightened efficiency has resulted in adverse consequences, including environmental deterioration such as water and land pollution. Land degradation, resulting from both natural phenomena and human actions, has a significant impact on a considerable area of the Earth’s land and affects billions of individuals globally. The annual economic cost of land degradation exceeds $300 billion, resulting from a variety of causes such as insufficient land management and the pressures of population increase. Anthropogenic factors such as deforestation, intensified agriculture, and population growth worsen soil degradation, jeopardising essential ecosystem services and endangering food security. Simultaneously, the increasing release of greenhouse gases and the resulting climate change pose a significant threat to the long-term viability of agriculture. It is imperative to take immediate action to reduce their impact. Given the importance of soil health in sustainable agriculture and climate mitigation, conservation agriculture (CA) is seen as a possible option. Conservation agriculture approaches promote soil health, lower cultivation expenses, and decrease land degradation by minimising soil disturbance, boosting soil organic matter, and stimulating biological activity. Land Degradation Neutrality (LDN) initiatives, which are essential for achieving Sustainable Development Goal 15, provide a structure for achieving a balance between land restoration and degradation. These initiatives highlight the significance of implementing sustainable land management methods. This review compiles up-to-date research on conservation measures that promote Land Degradation Neutrality (LDN) and examines their implications for ecosystem services and policy interventions. The assessment emphasises the importance of sustainable land management and stresses the necessity of collective actions to tackle land degradation concerns and ensure agricultural sustainability in response to increasing environmental risks.