

Developing an integrated framework to manage deforestation associated with tobacco farming in Zimbabwe: a systematic review

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Abstract

Tobacco industry is the mainstay of Zimbabwe's economy although it is associated with detrimental environmental impacts. Tobacco farming is expanding whilst the climate is changing thereby intensifying deforestation of already depleted forests in the country. Previous studies revealed several efforts implemented to control tobacco farming induced-deforestation but their success is constrained. To attain sustainability in the tobacco industry, there is a need to gather adequate information surrounding tobacco farming and forest resources consumption. As a result, this review article adopted the Preferred Reporting Items for Systematic review and Meta-Analysis methodology using already existing literature retrieved from Google Scholar, Scopus and ScienceDirect databases together with grey literature from authentic websites and organisations. This study used 48 studies published between 2000 and 2024 that were considered relevant for a systematic literature review based on full-text screening after the removal of documents that were not written in English, out of scope studies excluded based on abstract and title content. Literature sources were analysed and synthesised using a desktop-based research approach. The major findings of this research indicate that tobacco farming accounts for 15% of deforestation in Zimbabwe. It also revealed that the impetus behind rapid deforestation is largely attributed to economic, social and political challenges although some scholars argue it is driven by climate change. Lack of financial resources to acquire energy efficient barns, electricity power cuts, government support in tobacco farming, environmental governance injustices and farmers attitudinal behaviours significantly contribute to intense deforestation. Recognising the situation, an integrated framework which promulgates multifaceted sets of efforts was developed to guide and unify different stakeholders to sustainably manage forest resources. Owing to continued tobacco farming-induced deforestation, this review articles aims to develop a framework with interconnected efforts to enhance effective forest resource conservation and management. This research aims to develop a framework because most of the previous studies were concerned about exploring strategies to increase tobacco production whilst giving little attention to the need for protecting forest resources to massive depletion. The framework endorses that governments and environmental

management agencies have to actively foster environmental education and awareness programmes and law enforcement to ensure compliance to intended forest consumption and management by tobacco farmers. Funding of tobacco farmers by governments, tobacco farming boards and non-governmental organisations must be initiated to enable the growers to invest into leaf curing alternatives such as electricity barns to reduce dependency on forests. Environmental and tobacco farming agencies, governments and communities have to use researches for planning and decision making process and adopt the proffered efforts to enhance collaborative engagement and effective forest management in the agriculture sector. The framework incorporates various SDGs, Africa Agenda 2063, and Zimbabwe Vision 2030 to initiate internationally and locally recognised environmental management standards. These blueprints are also important as they are sustainability indicators and goals to reduce in the context of environmental sustainability.

Keywords: Tobacco farming, Deforestation, Forest, Environmental governance, Framework, Zimbabwe