The negative and positive impacts of Prosopis juliflora on the Kenyan and Ethiopian Ecosystems: a review

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Abstract

Aim: Invasive alien species present a serious threat to the world's ecosystems and livelihoods. The aim of this paper was to review the negative and positive impacts of Prosopis juliflora (Sw.) DC on the Kenyan and Ethiopian Ecosystems. Location: Kenya and Ethiopia Methods: Thirty-one publications were used to write this paper. The articles were identified through keyword searches such as Prosopis juliflora, invasive species, impacts, livelihoods, and ecosystems using google scholar guided by the above-mentioned categories and forward searches of publications that cited relevant articles helped in gathering publications. Results: We found out that Prosopis juliflora was introduced to Kenya and Ethiopia to tackle desertification, to ensure the self-sufficiency of wood products and to conserve water and soil in the semi-arid areas. Years later, this species has turned invasive; although the communities in infested areas have realized some benefits from this tree such as obtaining timber, charcoal, firewood, shelter, livestock feed from its pods; the negative impacts of this tree have far outweighed the positives. Notably, this invasive plant has significantly impacted agricultural and livestock productivity because it invaded the pasturelands and farmlands. For instance, the negative health implications for livestock significantly reduce their productivity. Similarly, this plant has reduced the diversity of the native trees, herbaceous, and grasses because of its ability to outcompete them. Control methods such as biological, mechanical, chemical, and control by utilization have been tried but none have so far been effective in controlling this invasive plant. Main Conclusions: Our results showed that Prosopis juliflora is a serious invader that has a huge potential of invading the arid and semi-arid lands of Kenya and Ethiopia. Therefore, stakeholders at all levels need to put in place integrated management strategies to reduce the spread and the negative impacts of this species.

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