



Towards an Efficient Management of the Biological Invasions with Special Focus on the Benin's Phytosanitary Legislation: Review

Mahoutin Sonagnon Kindomissi^{*1,2}, Elie Ayitondji Dannon^{1,2}, Eric Adossou³, Gualbert Houéménou⁴

¹Université Nationale des Sciences, Technologies, Ingénierie et Mathématiques (UNSTIM), École Normale Supérieure de Natitingou, BP 72 Natitingou, Bénin; k.mahouson13@gmail.com*,

²International Institute of Tropical Agriculture (IITA) 08 B.P. 0932. Tri Postal. Cotonou, Bénin; edannon@gmail.com

³Service Protection des Végétaux et Contrôle Phytosanitaire (SPVCP), Direction de la Production Végétale (DPV) 01 BP 58 Porto-Novo, Ministère de l'Agriculture, de l'Élevage et de la Pêche (MAEP), Bénin ; ericadossou2@yahoo.fr ;

⁴École Polytechnique d'Abomey- Calavi, Laboratoire de Recherche en Biologie Appliquée, Unité de Recherche sur les Invasions Biologiques, Université d'Abomey- Calavi (UAC), 01 BP 2009, Cotonou, Benin ; gualbert.houemenou@gmail.com

* Correspondence: E-mail address: k.mahouson13@gmail.com (M. Kindomissi).

Orcid address: <https://orcid.org/0009-0002-7476-8170>

Current address : Port Environmental Monitoring Platform (EMPP), Autonomous Port of Cotonou, | Bvd de la Marina | 01 BP 927, Cotonou, Benin

Submitted 11/06/2025, Published online on 31/07/2025 in the <https://www.m.elewa.org/Journals/journal-of-applied-biosciences> <https://doi.org/10.35759/JABs.210.4>

ABSTRACT

Invasive alien insects pose a serious challenge to agriculture in Benin, threatening the food security, biodiversity, and socio-economic resilience of the country. Global trade of plants and plant products has inadvertently spread pests, causing significant crop and post-harvest losses. To overcome such issues, a robust phytosanitary legal framework is therefore essential for risk prevention and management. This review critically examines the relevance and effectiveness of Benin's regulatory measures in the context of international plant health standards. This study analysis, aligned with international standards, reveals the strengths and weaknesses of Benin's plant health legislation. It provides a technical-scientific analysis of Benin's phytosanitary legislation in the light of International Standards and Phytosanitary Measures. Our analysis reveals the strengths and weaknesses of various frameworks in optimizing interventions. Key priorities for enhancing resilience in Beninese agriculture include strengthening institutional capacity, improving early detection and surveillance systems, and implementing integrated pest management strategies.

Keywords: phytosanitary policy and governance, legal regulation, invasive species, biosecurity, international standards, agricultural development, Benin.