



ICRAF Policy Series

Invasive Alien Species Policy

November 2014

The World Agroforestry Centre (ICRAF) is an international agricultural research organization. We generate science-based knowledge about the diverse roles trees play in agricultural landscapes. We aim to advance policies and practices that benefit both the poor and the environment.

Our vision is a rural transformation in the developing world as smallholder households increase their use of trees on farm. This will help to improve food security, nutrition, health, income and social cohesion; provide shelter and energy; and lead to greater environmental sustainability. The Centre's mission is to generate science-based knowledge about the diverse roles that trees play in agricultural landscapes, and to use its research to advance policies and practices, and their implementation that benefit the poor and the environment.

The World Agroforestry Centre is one of the 15 Centres of the Consultative Group on International Agricultural Research (CGIAR). Our headquarters are in Nairobi, Kenya, with regional and sub-regional offices located in China, India, Indonesia, Kenya, Malawi, Mali, Peru and Cameroon. We conduct research in 35 countries in Africa, Asia and Latin America and receive funding from over 50 different governments, private foundations, international organizations and regional development banks.

1. Introduction

In pursuit of the institute's mission and vision, ICRAF works with a wide range of tree species, including many that are alien and potentially invasive. This policy is intended to help guide ICRAF and its partners on how to prevent and mitigate the negative effects to biodiversity, ecosystems and human enterprise that could result from the introduction, both intentional and unintentional, of invasive alien species. This is especially so because the Centre recognizes the vulnerability of agro-ecosystems to invasion when under plantations and other narrow genetic base production systems. It also seeks to promote resilience through wide intra- and inter-specific diversity, especially in smallholder farming systems.

1.1 Policy framework

ICRAF is committed to operating in conformity with all international legislation relating to plant genetic resources. This policy describes the principles and procedures that ICRAF expects staff, students and consultants to adopt in relation to invasive alien species. This document is an update of the 2004 Genetic Resources Policy.

1.2 Target group

All ICRAF scientific staff, consultants, students, partners and collaborators

1.3 Objectives

- a) To minimize unintended negative impacts of alien species through invasion outside of plantings.
- b) To adopt best international practices for managing the risks posed by invasive alien species.

1.4 Principles

- 1.4.1 Nationally and internationally, the Centre supports the four major options available for dealing with alien invasive species, namely: prevention, early detection, control and eradication, although it is only active in prevention and early detection.
- 1.4.2 In cases of accidental introductions it may also be engaged in the early stages of research for control measures (mechanical, chemical and biological).
- 1.4.3 Prevention shall mainly be addressed through risk assessment, compliance with phytosanitary best practice and publication of a list of prohibited taxa.
- 1.4.4 Early detection shall be facilitated through the Centre's assessments and scrutiny of vegetation surveys from both on-farm and natural ecosystems to detect potential invaders and facilitate early detection.
- 1.4.5 This policy should not be interpreted to imply that ICRAF is against introduction of all exotic species within or between countries. However, it

acknowledges that it has a responsibility to ensure its activities do not result in unintended negative impacts. Recognizing that all alien tree species may be potentially invasive, especially in changing socio-economic and land use situations that can turn a beneficial plant into a problem, caution is required during introductions, until risk assessment, contained screening or field testing is carried out.

- 1.4.6 ICRAF recognizes that in many developing countries (where it operates and in others where it seeks to promote agroforestry), national regulations and authorities are not fully developed or adequately supported. Considering that between 0.5% and 0.7% of the world's tree and shrub species are currently invasive outside their natural range, ICRAF seeks to follow best international practice for invasive alien species, rather than minimum legal or regulatory compliance.
- 1.4.7 Movement of germplasm between countries, even for low-risk species should be accompanied by standard Material Transfer Agreements as outlined in the Genetic Resources Policy and subjected to thorough phytosanitary checks to ensure no alien living organisms are exported.
- 1.4.8 ICRAF recognizes the significance of increasing awareness about invasive alien species to facilitate their effective management. Whether disseminating tree information through its Agroforestry Database¹, or facilitating the informed use of tree germplasm through the Tree Seed Suppliers Directory², it provides comprehensive biosafety information on the tree species covered in these resources, consistent with Article II below.
- 1.4.9 This policy is informed by national and international expertise and instruments³.
- 1.4.10 The policy is not intended to cover the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may also possess "weediness" potential or threaten biodiversity.

¹ Available at <http://www.worldagroforestry.org/treedb2/speciesprofile.php>

² Available at <http://intranet.icraf.org/treesmarkets/tssd/tss.php>

³ Specifically, the institutions which have guided the development of the policy include: Australian Quarantine Inspection Service, CAB International-<http://www.cabi.org/isc>, the CGIAR Central Advisory Service, Commonwealth Scientific and Industrial Research Organization, Food and Agricultural Organization (FAO), Global Invasive Species Programme (GISP), Bioversity International, Kenyan Plant Health Inspectorate, United Nations Environment Programme, World Conservation Union and World Trade Organization. The international instruments which have influenced the policy include: Convention on Biological Diversity and in particular Article 6 (General Measures), Article 8 (In situ conservation), Article 10 (Sustainable use) and Article 15 (Access to genetic resources); International Plant Protection Convention (FAO), Phytosanitary Convention for Africa (AU), and Agenda 21 – UNCED (Paragraphs 11.14, 15.3).

2. Definitions of terms

The following definitions are used for terms included in this policy⁴.

- 2.1 Introduction: The purposeful or unintentional movement by humans of species propagules outside its natural range and dispersal potential. This movement can be either within a country, between countries or areas beyond a national jurisdiction.
- 2.2 Alien species: (synonyms: non-native, non-indigenous, foreign, exotic) a species, subspecies, or lower taxon introduced outside its present or recent historical past distribution; includes any part, gamete, seeds, eggs, or propagules of such species that might survive and subsequently reproduce.
- 2.3 Casual alien species: Alien species that may flourish and even reproduce occasionally in an area, but which do not form self-replacing populations, and which rely on repeated introductions for their persistence.
- 2.4 Naturalized species: Alien species that reproduce consistently (c.f. casual alien species) and sustain populations over more than one life cycle without direct intervention by humans; they often reproduce freely, and do not necessarily invade natural, semi-natural or human-made ecosystems.
- 2.5 Invasive species: Naturalized plants that reproductive offspring, often in large numbers at considerable distances from parent plants (approximately: >100m; <50 years for a taxa spreading by seeds and other propagules; >6m/3years for taxa spreading by roots, rhizomes, stolon or creeping systems), and thus have the potential to spread over a considerable area.
- 2.6 Weeds: Plants (not necessarily alien) that grow in sites where they are not wanted and which usually have detectable economic or environmental effects (Synonyms: plant pests, harmful species).
- 2.7 Environmental weeds: Alien plant taxa that invade natural vegetation and usually, adversely affecting native biodiversity and/or ecosystem functioning.
- 2.8 Transformers: A subset of invasive plants which change the character, condition, form or nature of an ecosystem over a substantial area relative to the extent of that ecosystem They have a clear impact on the ecosystem.

⁴ Adopted from: Richardson et al (2000) Naturalization and invasion of alien plants: concepts and definitions. *Diversity and Distributions* 6, 93-107

- 2.9 Phytosanitary measures: Any measure applied to: (a) protect human, animal or plant life or health from the entry, establishment or spread of pests, diseases, or disease-carrying organisms; or (b) prevent or limit damage from the entry, establishment or spread of pests.

3. Invasive species categories

In relation to invasive species ICRAF uses four categories to classify trees and other plants in agroforestry systems⁵:

- 3.1 Prohibited taxa: Species known to be invasive and persistent, and so destructive that their introduction should be prohibited.
- 3.2 Problematic taxa: Species known to be invasive under certain conditions, or reported to be invasive at particular locations.
- 3.3 Uncertain risk taxa: The great majority of species whose potential of being invasive weeds is unknown, and may differ in risk between different exotic locations.
- 3.4 Low risk taxa: Species known to have low potential of being invasive weeds based on ecological criteria and experience.

The “uncertain risk taxa” category constitutes the vast majority of plant taxa. Steps to reduce the uncertainty for these taxa are outlined in the section on risk assessment of this policy

4. Risk assessment of invasive alien species

- 4.1 The World Agroforestry Centre (ICRAF) insists that all deliberate introductions of non-indigenous or cryptogenic (i.e. of unknown origin) species by ICRAF projects and staff are subject to import risk assessment in collaboration with relevant phytosanitary regulatory organizations.
- 4.2 Risk assessment should be carried out on a case-by-case basis where the information required and level of detail may vary depending on the species concerned, its intended use and target environment, taking into consideration climate change models.
- 4.3 Risk assessments undertaken pursuant to this Policy shall be carried out in a transparent, objective and defensible manner, following internationally-recognized risk assessment techniques and national regulations of the respective countries where the introductions will be done or have occurred.

⁵ Adapted from Invasive Alien Species Toolkit, GISP, Wittenberg and Cock, 2001)
http://www.issg.org/gisp_guidelines_toolkits.htm

4.4 Risk assessment shall also take into account expert advice of relevant international organizations.

4.5 Lack of scientific knowledge shall not necessarily be interpreted as indicating a particular level of risk, absence of risk or an acceptable risk.

5 The methodology for risk assessment

Risk assessment will include but not limited to:

5.1 Identification of any characteristic associated with the species that may have adverse effects on biodiversity and ecosystem function.

5.2 Analysis of evidence for naturalization, invasiveness and impact elsewhere in the world.

5.3 Evaluation of the likelihood of these adverse effects being realized.

5.4 Estimation of the overall risk posed by the species based on evaluation of the likelihood and consequences of the identified adverse effects.

5.5 Recommendation on whether or not the risks are acceptable (depends on predicted potential value of the plant) or manageable, including, where necessary, identification of strategies to manage these risks.

5.6 Whilst countries which are signatory to the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Standards (the 'SPS Agreement') can only ban imports of weeds already in a country if their distribution is limited and they are subject to an 'official control program', or if an importer wants to introduce a new strain that differs genetically such that it poses a greater weed risk than existing strains, species on the "Prohibited taxa" list should not be imported, and great caution should be used with species on the "Problematic taxa" list.

5.7 ICRAF will support research on control and management of invasive species that may accidentally result from its activities. However, risk assessment measures will be put in place to ensure such a scenario does not arise.

5.8 A variety of risk assessment methods may be used or applied, depending on the species, target environment and national regulations⁶.

⁶ The Weed Risk Assessment (WRA) system developed in Australia (<http://www.daff.gov.au/ba/reviews/weeds>) and the APHIS Risk Assessment guidelines in USA (<http://www.aphis.usda.gov/ppq/pracommodity/cpraguide.pdf>) are two good examples to follow.

Disclaimer

1. This policy is intended to assist in minimizing the probability of harmful introductions.
2. World Agroforestry Centre (ICRAF) accepts no responsibility or liability for the consequences of using information contained herein or within the species lists of risk.
3. While every effort has been made to ensure accuracy, it remains the responsibility of the user to avail themselves of the latest information on national and international regulations, species and risk assessment procedures.
4. Under no circumstances will ICRAF, its agents or employees be held liable for any special, consequential or indirect loss or damage arising from any use of or reliance on any information contained in this policy.
5. As much as ICRAF will provide guidance on the use of germplasm it has assisted in acquiring, the Centre will not be held responsible for any invasion that may result from another party's negligence and poor maintenance.