European Commission

Science for Environment Policy

How to prevent alien plant invasions in the global ornamental horticulture trade?

Alien plant invasions can have significant environmental, ecosystem and economic implications. Since ornamental horticulture is the primary pathway for invasive alien plant introductions, it is a suitable focus for prevention policies. A recent review of published evidence has examined the effectiveness of four major instruments: pre-border import restrictions, post-border sales bans, industry codes of conduct, and consumer education. The study highlights that, while each instrument has the potential to contribute to a reduction in plant invasion risk, none is sufficient to achieve this goal alone. The researchers, therefore, describe how the four instruments can be integrated along the ornamental horticulture industry supply chain to reduce risk more effectively, and outlines the role that government, industry and other stakeholders must play to achieve this goal.

Ornamental horticulture is a large industry, which delivers economic benefits and enjoyment to many. However, the global trade in ornamental nursery stock is also the primary pathway by which invasive alien plants are introduced worldwide. While alien plant invasions can be considered, to some extent, an unavoidable risk of maintaining the global trade, policies that can effectively reduce risk along the ornamental plant supply chain are highly desirable. Preventing the introduction or establishment of potentially invasive alien species[1] is often the most cost-effective and environmentally-desirable policy option to manage invasion.

New research, conducted with the support of COST Action TD1209 "Alien Challenge", critically appraised four major policy instruments currently used to target invasion: pre-border import restrictions, post-border sales bans, industry codes of conduct, and consumer education. It was found that effective pre-border interventions require rigorous risk assessment and high industry compliance, while post-border sales bans become progressively less effective when alien species become widespread across a region. The effectiveness and uptake of voluntary codes of conduct was found to be limited, due to a lack of independent performance evaluation and public interest. These same factors also discouraged shifts in consumer preference away from invasive and alien species, despite efforts to increase public awareness and shift consumer values.

Overall, it was determined that, while no single policy instrument is sufficient to completely reduce alien plant invasion risk, their effectiveness can be increased through their integrated implementation along the ornamental industry supply chain. The study describes how policy integration could be achieved both pre-- and post-border. In both cases, a weed risk assessment would be conducted to determine whether a species should be accepted or rejected for import or sale. Clear protocols would then be followed according to the species' status:

- **Accepted species**, pre- and post-border, would be added to a national whitelist and, upon entering the market, labelled as having a low likelihood of invasion ('green' labelling) in order to reinforce public knowledge of risk.
- **Uncertain species** (where the assessment result is not clear) would be prohibited from entry at the border. Data gaps to reduce uncertainty would be identified and communicated to the industry. Post-border, uncertain species would continue to be sold but labelled as intermediate risk ('amber' labelling) until more information is available. Monitoring would ensure uncertain species do not become established in natural areas.

Read more about:
Emerging risks, Environment information services, Risk assessment

1.See: EU Regulation 1143/2014 on Invasive Alien Species

Environment

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(continued)

- **Rejected species** would be prohibited from entry at the border and added to a blacklist. Post-border, if a rejected species has not yet become widely established in the wild, legislated sales bans and active eradication campaigns would be implemented. If already established, voluntary sales bans supported by industry would be more appropriate and a programme of containment or control within high-value environments would be recommended. In both cases, the species would be labelled at high risk ('red' labelling) to ensure consumers make informed decisions.

In addition to providing several practical policy recommendations, this study highlights the complementary roles that government, industry and the public must play in alien plant invasion prevention and the necessity of closer partnerships between government, NGOs and industry. In particular, the researchers propose the establishment of a joint body that oversees the outcomes of independent weed risk assessment, advances the effectiveness of codes of conduct, informs priorities for sales bans, endorses appropriate labelling and promotes consumer education.