

What role can the systems approach play in preventing the introduction of invasive alien species?

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The international movement of pests occurs overwhelmingly via trade pathways, almost regardless of the goods being traded. This fact is recognized in the phytosanitary measures applied through national and regional legislation worldwide. To prevent the entry of quarantine pests, potential pathways may be prohibited or require particular measures to ensure pest freedom. For example, wood packaging used to transport goods is regulated under the International Standard for Phytosanitary Measures (ISPM) No 15 in which heat treatment or fumigation is approved to ensure freedom from pests. Whilst such procedures are generally applied to eliminate certain known pests, they also have the advantage of killing other unknown pest organisms that might be present. Other pathways, notably plants for planting, generally cannot be treated using one direct intervention to remove all pests. In such cases, two or more independent risk management measures need to be applied and these are most effective if they follow a Systems Approach (SA) based on ISPM 14. There are currently no internationally accepted SAs for specific pathways. SAs tend to be created on a bilateral basis so they can take into account all the factors specific to the pathway at origin, in transit and in the importing country. SAs are developed by first evaluating how pests become associated with the pathway and, in a sequential approach, how a combination of different direct processes, inspection regimes and indirect processes can reduce risk to acceptable levels by the time the pathway reaches its end point and associated goods are delivered to end users. SAs that strictly or loosely follow ISPM 14 are already in place or are being developed in countries such as Australia, Canada, New Zealand, the USA and the EU, but there is still a pressing need to link the ecology of pest invasion to the practicalities of risk reduction. The SA is proposed as the most effective way forward of ensuring pest freedom with minimal impact on trade.

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