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Precision Safeguarding:
Risk-based Designs for Safe Trade

The historical view of safeguarding has been based on pest exclusion designs that focus primarily on inspection at the border and require the strongest possible response for organisms that could meet the defining criteria for a quarantine pest. Since 1994, the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement) tells us that this approach is legitimate for emergency actions, but phytosanitary measures that are routinely applied need to be the least restrictive actions to achieve the appropriate level of protection based on the risk of pest introduction. The appropriate response is therefore adjusted to the risk. Adopting this approach makes resources that would be wasted on overreactions to low risk situations available to better manage risks that have been identified as more significant. The objective of risk-based designs is to be more precise, strategic, and effective by leveraging data and analysis to prioritize and target risk.

Risk-based Regulations (RBR)

A wide range of opportunities exist for policy adjustments that promote precision safeguarding. One key area is in regulatory design; moving toward less prescriptive regulations in favor of standards-based designs for enterable articles (a white list) linked to risk analysis. The effect of this shift is to reduce investments in rulemaking while also increasing flexibility for policy-makers to address risk based on scientific evidence and analysis.

Risk management is fertile ground for new regulatory designs, especially those associated with systems approaches, offshore programs, and other strategies that take advantage of multiple opportunities to mitigate pest risk across the safeguarding continuum. These designs allow for greater flexibility to align programs with the risk and leverage the actions and activities of the private sector beyond what may be officially prescribed only for National Plant Protection Organizations. The adoption of policies to allow for third-party auditing and monitoring programs and reducing oversight for high-compliance entities allows for shifting resources to higher risk programs.

Risk-based Sampling (RBS)

The fate of hundreds of consignments in ports around the world is decided every day based on inspection for both the certification of exports and the clearance of imports. Inspection for the detection of harmful exotic pests is a sampling process based on the statistical concepts associated with the probability of detection. By designing inspection processes around basic statistical concepts, inspection programs are able to better identify and rank non-compliant imports. Ranking based on action rates associated with pest interceptions helps inspectors and policy makers to identify riskier imports and then adjust resources and policies to maximize the effectiveness of inspection.

RBS helps trade by providing a transparent and predictable process designed to consistently detect the same level of infestation regardless of shipment size. The results of RBS inspections provide the data needed to confidently rank imports in categories that reflect their phytosanitary status and changes in their phytosanitary status over time.

Overlaying inspection policies on these categories creates the opportunity to reduce inspection frequency and/or intensity for low risk imports thereby rewarding the importers of clean material with expedited clearance.

It's Win — Win — Win! Faster clearance for importers, less time for inspectors on low risk imports, and better overall risk management.

Risk-based Treatments (RBT)

Treatments have a long history of development around the assumptions of a worst-case scenario and one-size-fits-all design for a single mitigation with high-efficacy based on mortality. As a result, most treatments are an over-reaction to the pest risk. In instances of high infestation where even a few survivors are a problem, the treatment may even be an under-reaction. The lack of alignment with risk is problematic from the standpoint of consistent risk management. It can also result in a waste of resources and an unnecessary burden to commerce.

In emergency situations it may be necessary to use a treatment without regard to its alignment with the risk simply because there isn't the opportunity to be more precise. Treatments that are prescribed in advance as conditions for trade are different because the strength of measures (efficacy in the case of treatments) should have a rational relationship with the risk.

Many existing treatments were adopted before pest risk analysis was practiced. The efficacy of many treatments may be substantially reduced and other treatments eliminated completely by simply evaluating the action policy for the treatment to align it with the risk; aiming for an efficacy level that is consistent with the infestation level and likelihood of introduction. These strategies have the added advantage of reducing the use of environmentally harmful pesticides such as methyl bromide.