

Pest Risk Analysis Overview





Lesson Overview

- Introduction
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Introduction

- Pest Risk Analysis (PRA) is an evolving and dynamic field
- Came to the forefront of Plant Protection Organizations (PPOs) with the adoption of the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)



Introduction

- SPS Agreement specify that phytosanitary measures must be based on international standards or risk analysis
- Since there was no history of standard setting in the phytosanitary community at the time, it meant that essentially, all phytosanitary measures must be based on risk analysis



Introduction

Purpose

Provide a basic understanding of the pest risk analysis discipline and its importance as a decision-making tool in regulatory plant protection



Topic 1: What is Risk?

• Chance of something bad happening and the consequence if it happens

Chance or **probability**



Undesirable outcome or **consequence**





Crossing the Road

The probability of being hit by a vehicle crossing this street

hit by aThe probability of being hit by aetvehicle crossing this street







Consequence of being hit by a

Pedestrian

Bicycle

Car



PHOTO: DESHAKALYAN CHOWDHURY/AFP/GETTY IMAGES



Core Elements of Risk

Risk Equation

Risk = Probability X Consequence

Combination of likelihood and impact



What is Risk?

- **Risk** is a combination of likelihood and impact
 - How likely is an event to happen?
 - How much of an impact it would have?
- Therefore **pest risk** is:
 - The probability of a pest establishing in a new area
 - The impact of a pest establishment



Uncertainty

- Why are there risks?
- Uncertainty.
- If there was no uncertainty, if we had perfect knowledge, there would be no risk





Core Elements

- Probability
- Consequence

• Uncertainty surrounds both elements



HAZARD

- Risk is associated with a hazard
- Hazard may be defined as anything that has a potential to cause harm to a valued asset
- E.g. Introduction of harmful plant pest





IPPC PLANT PEST CATEGORIES





Topic 2: What is PRA?

Each of the three core elements can be described and their relationship analyzed to understand...

.....if there is a risk,how bad it may behow certain we arewhat can be done about it



Topic 2: What is PRA?

The process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated and the strength of any phytosanitary measures to be taken against it



Stages of PRA under IPPC



Risk communication is an integral component and occurs throughout each stage



When is PRA Done?

Initiation-3 Ps

1.Pest:**2.P**athway**3.P**olicy



PEST-initiated PRA

- Also called Organism PRA
- Conducted on specific species e.g. a fruit fly species, weed or a beneficial organism



PEST-initiated PRA

- 1. Following detection of pest in consignments
- 2. Outbreaks inside or outside of the PRA area



3. Request for pest to be imported for research



PEST-initiated PRA

- 4. Overseas pest spread
- 5.Identification of an organism not previously known to be a pest







Pathway-initiated PRA

- •A pathway is defined as any means that allows entry and spread of a pest
 - Imported and exported commodities
 - Wood packaging material
 - Shipping Containers
 - Passenger baggage
 - International garbage
 - Imported commodity





Policy-initiated PRA

Policy-initiated PRA

Provides technical and scientific justification to support new or revised national policies





How is PRA Done?

Various models using guidelines provided by the IPPC in ISPMs

- **ISPM No. 2** Framework for Pest Risk Analysis
- •ISPM No. 11 Pest Risk Analysis for quarantine pests including analysis for environmental risks and living modified organisms
- **ISPM No. 21** Pest Risk Analysis for regulated non-quarantine pests



Stages of PRA

- Initiation (3Ps)
- Risk Assessment
- Risk Management



Stages of PRA

- Stage 1: Initiation
- Stage 2: Pest Risk Assessment
 - Step 1: Pest Categorization
 - Step 2: Assessment of the Probability of Introduction
 - Step 3: Assessment of Impacts
 - Step 4: Overall Assessment of Risk
 - Step 5: Uncertainty
- Stage 3: Pest Risk Management



PRA INITIATION

World-wide pests that affect the commodity

The ones that exist in the EXPORTING country

The ones that do not exist in the IMPORTING country

Those that present a reasonable risk of importation



Risk Assessment Model



potential

social



Risk Management Stage

- Identify options
- •Evaluate options for:
 - efficacy
 - feasibility
 - impacts



Risk Communication

- Document information sources
- Identify processes/methods
- Provide rationale for conclusions/decisions
- •Describe uncertainty and identify data gaps or areas for additional research



A process overview for PRA





• Categorization of commodity according to pest risk





- This standard provides NPPOs of importing countries on how to categorize commodities according to their pest risk when considering import requirements.
- This categorization should help in identifying whether further pest risk analysis is required and if phytosanitary certification is needed



- The first stage of categorization is based on whether the commodity has been processed and, if so, the method and degree of processing to which the commodity has been subjected before export.
- The second stage of categorization of commodities is based on their intended use after import.





Lesson Summary

- Risk is a pervasive part of decision-making and cannot be avoided unless decisions are totally avoided
- The purpose of risk analysis is to improve decisions and the decision-making process
- Risk analysis provides a way to seek out correct decisions when faced with imperfect knowledge.

Life is a balance between risk and reward

