



PRA and Potential Economic Consequences

Julian Smith



What do economic impacts include?

- The scope of the IPPC applies to:
 - Flora impacts (commercial, cultivated and wild)
 - Environmental impacts
 - Social consequences
- For a pest to qualify for phytosanitary measures it must have potential to cause economic loss within the PRA area

Types of consequences

- Direct effects
 - Longevity and viability of host
 - Yield, quality

- Indirect effects
 - Market access
 - Environmental effects
 - Social effects

- Plant commercial value
 - Economic margin under existing practices
 - Market access

- Environmental
 - Ecosystem services (e.g. pollen, soil erosion, shade)
 - Individual species

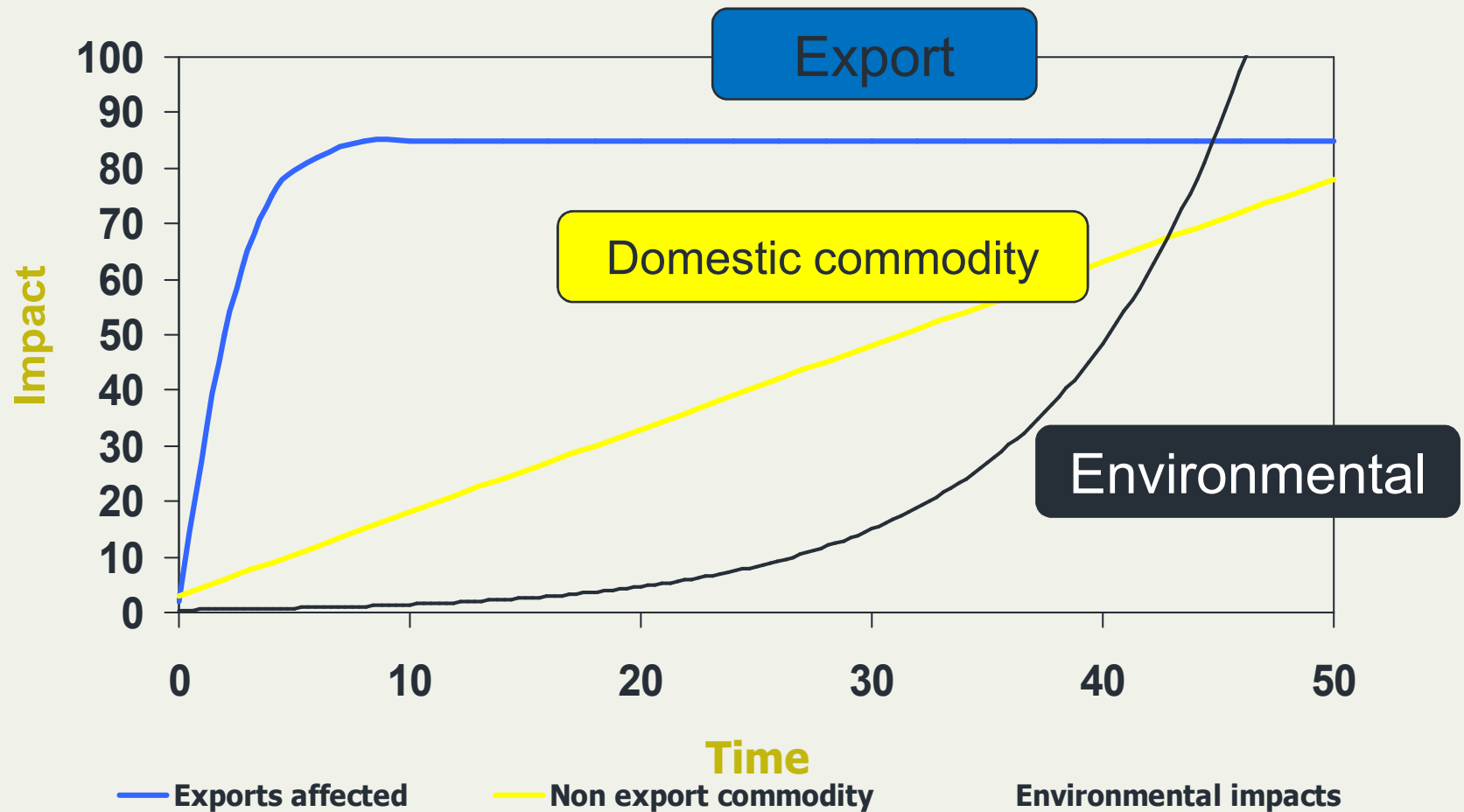
- Social/cultural
 - Tourism & rural past times
 - Consumer choice

Assessment of economic impacts

- Approaches for estimation
 - Expert opinion
 - Modelled
 - Example where the pest is established and equivalence of primary spread factors is shown
- Placing a economic (£s) value on environmental and social/cultural items that are intrinsically not traded/commercial is highly subjective

*A majority of information on the endangered areas and pest, has been determined under Establishment and Spread. Note this includes efficacy of existing pest management practices on the pest under PRA

Theoretical economic consequence curves over time



Assessment of plant commercial impacts

- Commercial competitiveness
 - Lower yield and/or quality achieved with existing inputs reduces margin and/or competitiveness
 - Loss of export market access due to imposed phytosanitary measures of importing countries

Assessment of environmental impacts

- Environmental values
 - Loss of keystone species
 - Loss of threatened/endangered species
 - Changes in niche habitats
 - Soil erosion
 - Loss of shade and dependency of shade plants
 - etc

Assessment of social impacts

- Social effects
 - Loss of choice (affordable food, past times)
 - Loss of employment
 - Reduction in property values
 - Loss of tourism
 - Reduction or loss of availability of traditional plants for cultural purposes
 - etc

Analytical techniques

- Partial budgeting
 - Financial impact at a small scale
 - Examine items in a budget which change due to the pest
- Partial equilibrium
 - Examine the impact of a change in supply or demand of a single good (host commodity)
 - Price changes - advanced economics technique
- General equilibrium
 - More complex than partial equilibrium
 - Examines the impact of changes in supply or demand of goods linked to host (e.g. substitute goods)
 - Very few examples in quarantine

Challenges in assessing impact

■ Information

- Resources

- Biological data
- Financial and economic data

- Tools

- Biological models
- Financial & economic models

■ Techniques

- Economists & biologists working together
- Assessing impacts with little information
- Quantifying environmental impacts
- Scaling up from local to national to regional impacts
- Modelling changes in impacts over time

Any questions!

- If you have any questions please feel free to contact:
 - julian.smith@fera.co.uk
 - chris.malumphy@fera.co.uk