ESTABLISHMENT OF PEST FREE AREAS

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Pest Free Areas in IPPC and ISPMs

Article IV of IPPC, point 2: The responsibilities of an official national plant protection organization shall include the following:

(e) the protection of endangered areas and the designation, maintenance and surveillance of pest free areas and areas of low pest prevalence;

Article 2 of ISPM 1 – Operational Principles:

2.3 Contracting parties should ensure that their phytosanitary measures concerning consignments moving into their territories take into account the status of areas, as designated by the NPPOs of the exporting countries. These may be areas where a regulated pest does not occur or occurs with low prevalence, or they may be pest free production sites or pest free places of production.

ISPMs ASSOCIATED TO PFAs

Establishment

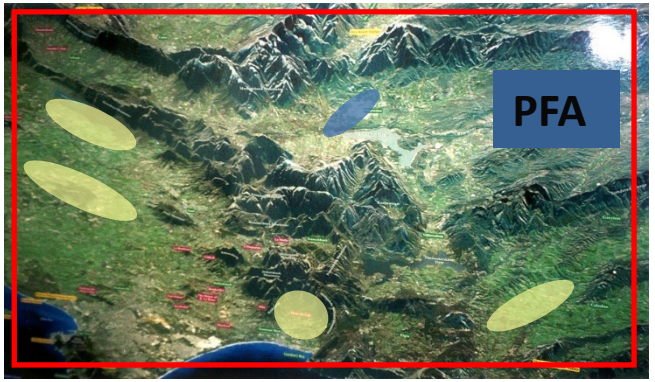
- ISPM 4 Requirements for the establishment of pest free areas
- ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites
- ISPM 22 Requirements for the establishment of areas of low pest prevalence
- ISPM 6 Surveillance
- ISPM 8 Determination of pest status in an area
- ISPM 9 Guidelines for pest eradication programmes
- ISPM 26 Establishment of pest free areas for fruit flies
- ISPM 29 Recognition of pest free areas and areas of low pest prevalence
- ISPM 14 Systems Approach
- ISPM 35 Systems Approach for fruit flies

Maintenance

- ISPM 4, 8, 9,10, 14, 26, 35

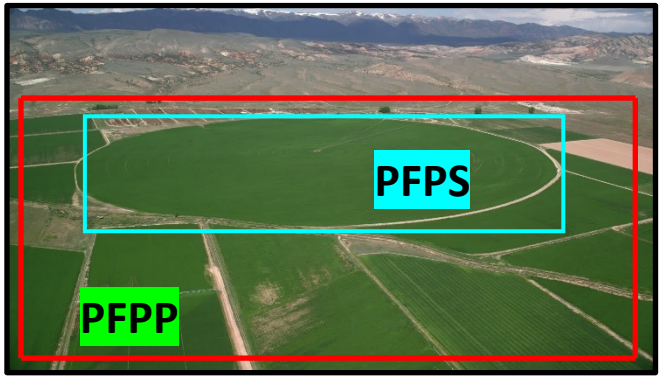
Distinctions between PFA s and Pest Free Places of Production (PFPP), and Pest Free Production Sites (PFPS)

- Size
  - ✓ PFA large scale (area-wide). Country or part(s) of a country (ISPM 4)
  - ✓ PFPP much smaller scale operated as a single farming unit (ISPM 10)
  - ✓ PFPS a subset of a PFPP (ISPM 10)



- Buffer
  - ✓ PFA large buffer zone
  - ✓ PFPP/PFPS in the immediate vicinity of the farming unit

- Time frame
  - ✓ PFA maintained for years
  - ✓ PFPP/PFPS can be maintained for one or few growing seasons



- Management
  - ✓ PFA managed by the NPPO with grower participation
  - ✓ PFPP/PFPS individually by growers with supervision of NPPO

- Status
  - ✓ PFA if pest is found the status of all the areas is affected
  - ✓ PFPP/PFPS only the place where the pest was found is affected

Guidance for Pest-Free Areas (PFAs) in EPPO is given in

PM 5 Standards on PRA include measures recommended for consignments

PM 3/61 on PFAs for producing potatoes free from quarantine pests

PM 8 Standards on commodity measures include PFAs as one of the options

PM 9 Standards on Official Control include elements relevant to PFAs

Glossary (ISPM 5) definitions

Pest Free Area: An area in which a specific pest is absent as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained

Pest Free Place of Production: Place of production in which a specific pest is absent as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period

Pest Free Production Site: A production site in which a specific pest is absent as demonstrated by scientific evidence, and in which, where appropriate, this condition is being officially maintained for a defined period

Area of Low Pest Prevalence: An area, whether all of a country, part of a country, or all or parts of several countries, as identified by the competent authorities, in which a specific pest is present at low levels and which is subject to effective surveillance or control

Types of PFAs

Three types of PFAs are recognized in ISPM 4 (*Requirements for the establishment of pest free areas*):

- an entire country
- an uninfested part of a country in which a limited infested area is present
- an uninfested part of a country situated within a generally infested area

In each of these cases, the PFA may, as appropriate, concern all or part of several countries

Components of PFAs

Three main components or stages are considered in the establishment and maintenance of a PFA:

- systems to establish freedom
- phytosanitary measures to maintain freedom
- checks to verify freedom has been maintained

The nature of these components will vary according to the biology of the pest (survival potential, rate of reproduction, means of dispersal, availability of host plants, etc.), the types and characteristics of the PFA (size, degree of isolation, ecology, etc.), and the level of phytosanitary security required, as based on pest risk analysis

Pest Free Areas in the EPPO PM 5/3

Establishment and maintenance of pest freedom of a crop, place of production or area

*Based on **pest spread capacity** without prejudice to any other measure that can be recommended.*

Very low rate of natural spread (<10m)	**pest freedom of the crop, or pest-free place of production or pest-free area**
Low to moderate rate of natural spread (>10 m but <10 km)	**pest-free place of production or pest free area**
High to very high rate of natural spread (>10 km)	**pest-free area**

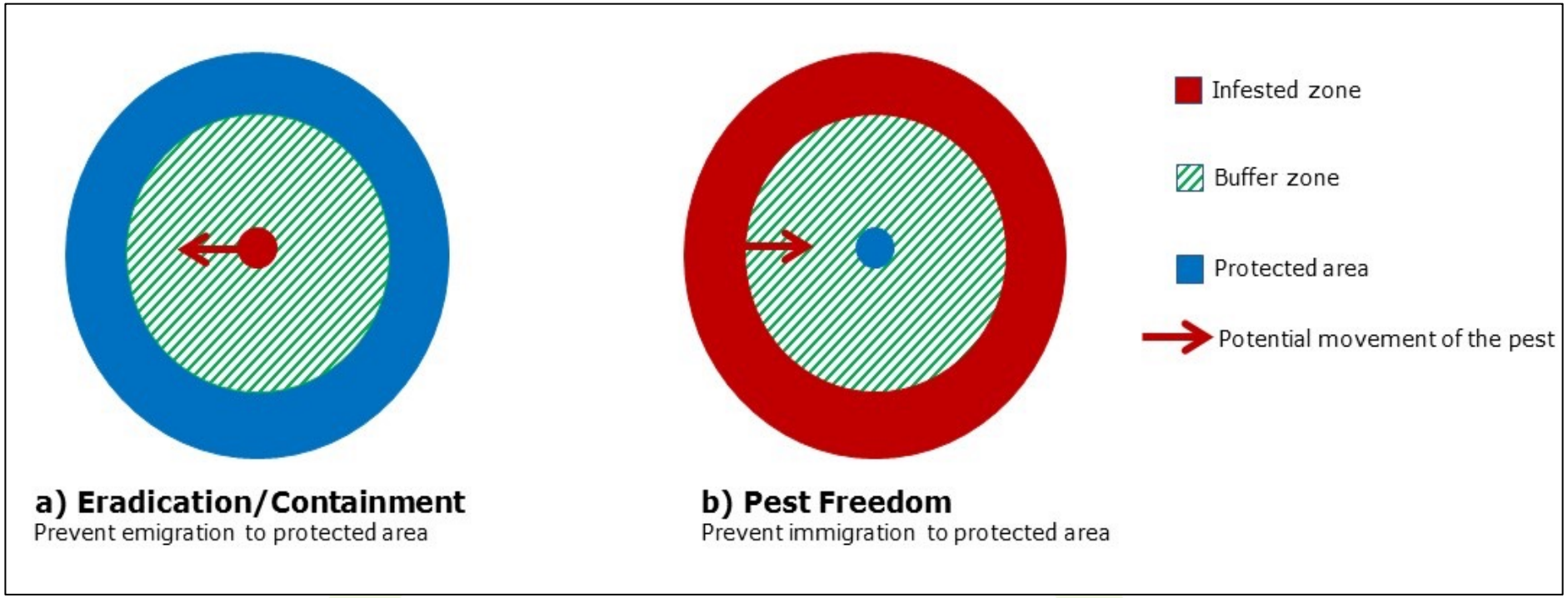
PFA is recommended as a measure for all types of natural spread capacity, but the next question is:

Can pest freedom of an area be reliably guaranteed?

i.e. it should be possible to fulfil the requirements outlined in ISPM 4. Consideration should be given to unintentional movement of the pest by human assistance and natural spread

Implementation of a buffer zone

- buffer zones are designed to minimize the probability of spread of a pest into or out of delimited areas
- the size of a buffer zone depends on the abilities of a pest to natural dispersal and human-assisted spread



Methods regarding PFAs

The methods used to achieve components of PFAs include:

- data collection (general surveillance)
- surveys (delimiting, detection, monitoring)
- phytosanitary measures
- audit (review and evaluation)
- documentation (reports, work plans)

Systems to establish freedom

These may include:

- General surveillance (collection of information from any available sources)
- Specific surveillance (delimiting and/or detection surveys)
- Eradication of the pest(s) if needed

Phytosanitary measures

Specific measures can be used to prevent the introduction and spread of a pest including:

- regulatory action such as:
  - listing of a pest on a quarantine pest list
  - specification of import requirements into a country or area
  - restriction of the movement of certain products within areas of a country or countries including buffer zones
- routine monitoring
- extension advice to producers

The application of phytosanitary measures to maintain pest freedom status is only justified in a PFA, or any portion of a PFA, in which ecological conditions are suitable for the pest to establish

Checks to verify freedom has been maintained

The continuing pest free status should be checked after the PFA has been established and phytosanitary measures for maintenance have been put in place. These checks may include:

- ad hoc inspection of exported consignments
- requirement that researchers, advisers or inspectors notify the NPPO of any occurrences of the pest of concern
- continuing detection surveys

Documentation and review of the PFA status

Whatever the type of PFA, documentation should be available, as appropriate, on the:

- data collected to establish the PFA
- various administrative measures taken in support of the PFA
- delimitation of the PFA
- phytosanitary regulations applied
- technical details of surveillance, or survey systems used

Recognition of PFAs

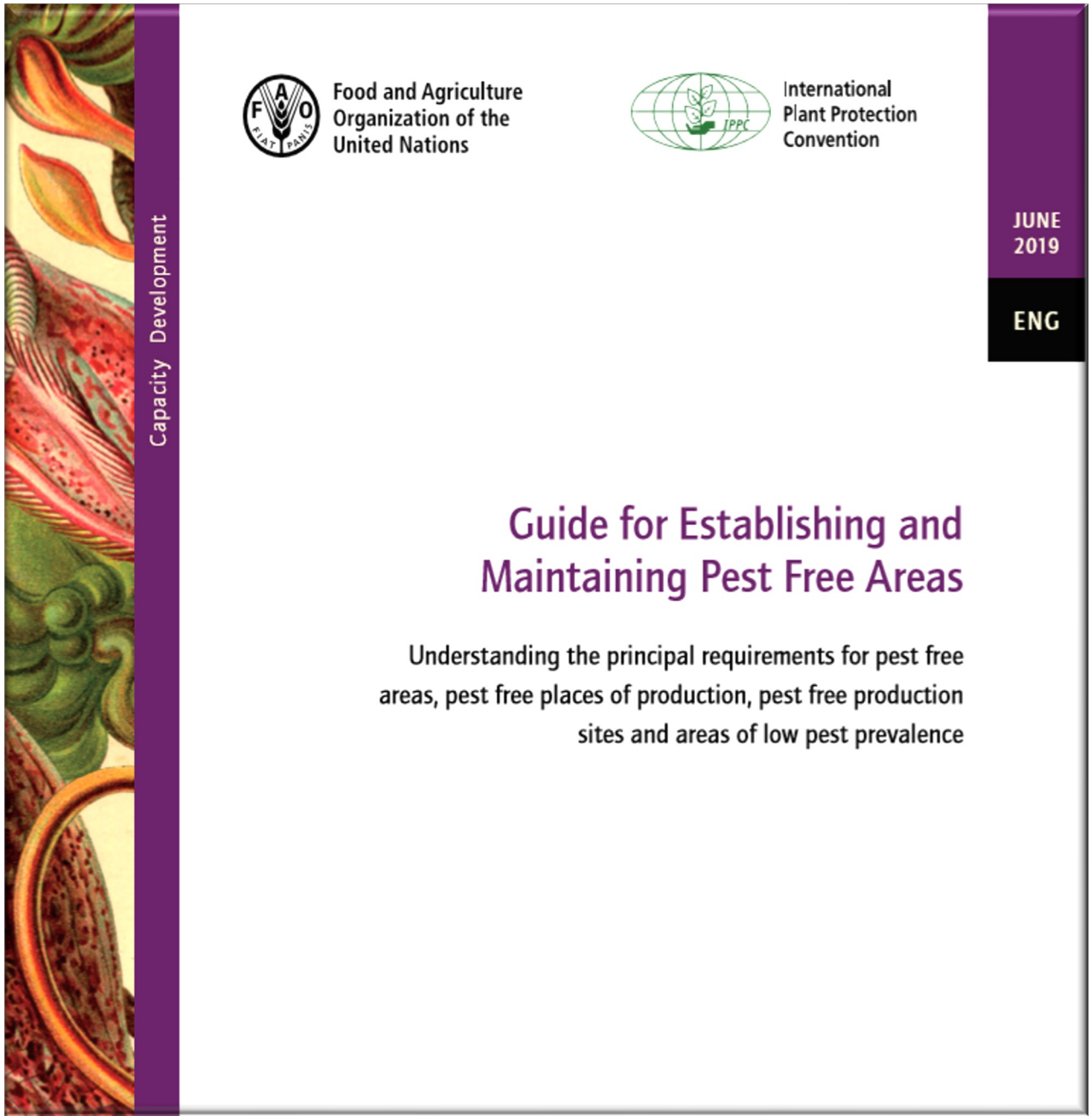
The process of recognition of PFAs is described in ISPM 29 (*Recognition of pest free areas and areas of low pest prevalence*)

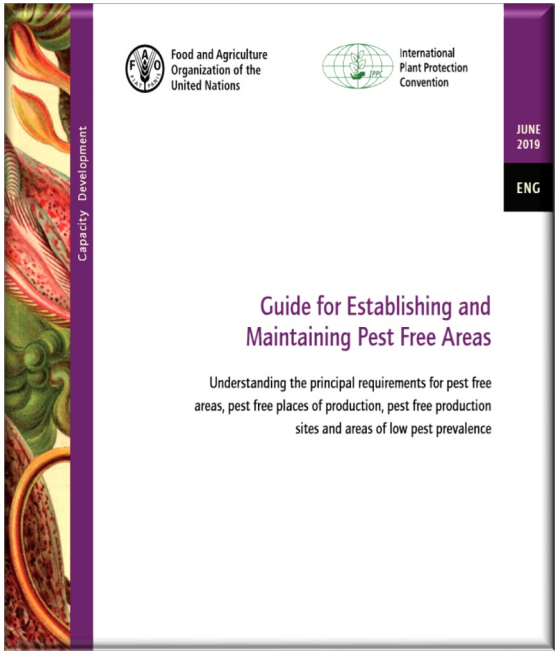
- require collaboration between NPPOs of exporting and importing countries (e.g. bilateral agreements)
- should respect phytosanitary principles (SPS, ISPM 1)
- should follow the steps stated in ISPM 29
- includes appropriate exchange and checks of information
- should lead to PFA recognition until:

  - there is a change in pest status in the area concerned and it is no longer a PFA

  - there are significant instances of non-compliance related to the PFA in question or related to the bilateral arrangement noted by the importing contracting party

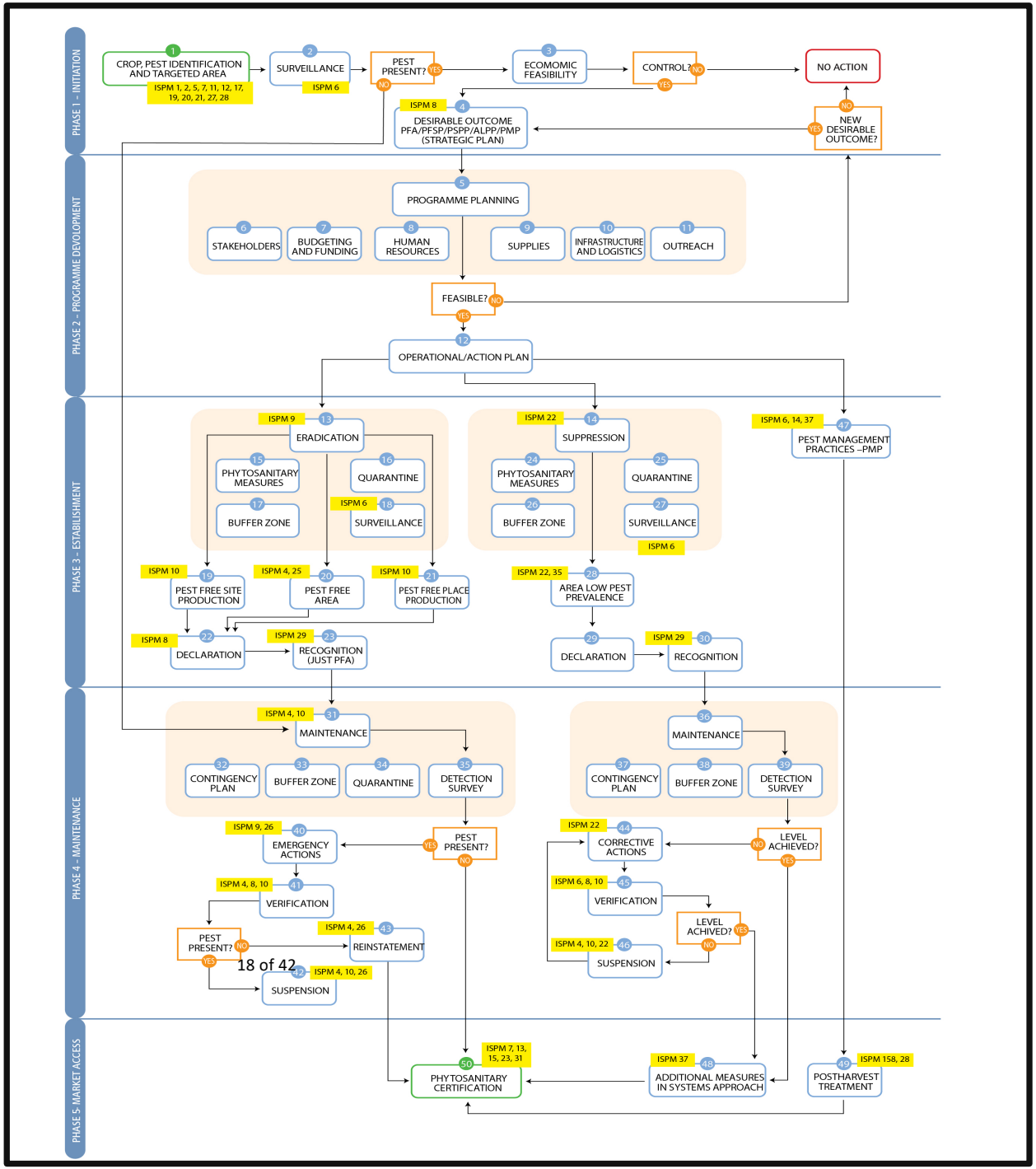
GUIDELINES ON PFAs





Decision Tree

For Establishment and Maintenance of PFA, PFPP, PFPS and ALPP



Guide for Establishing and Maintaining Pest Free Areas

PHASE 1 and 2 Initiation and Programme Development

PHASE 3 Establishment of a PFA

PHASE 4 and 5: Maintenance and Market Access

TECHNICAL FEASIBILITY of PFA

- Level of risk associated with target pest incursions to the PFA

Checkpoints

- Feasibility of artificially isolating the area to prevent reinfestations

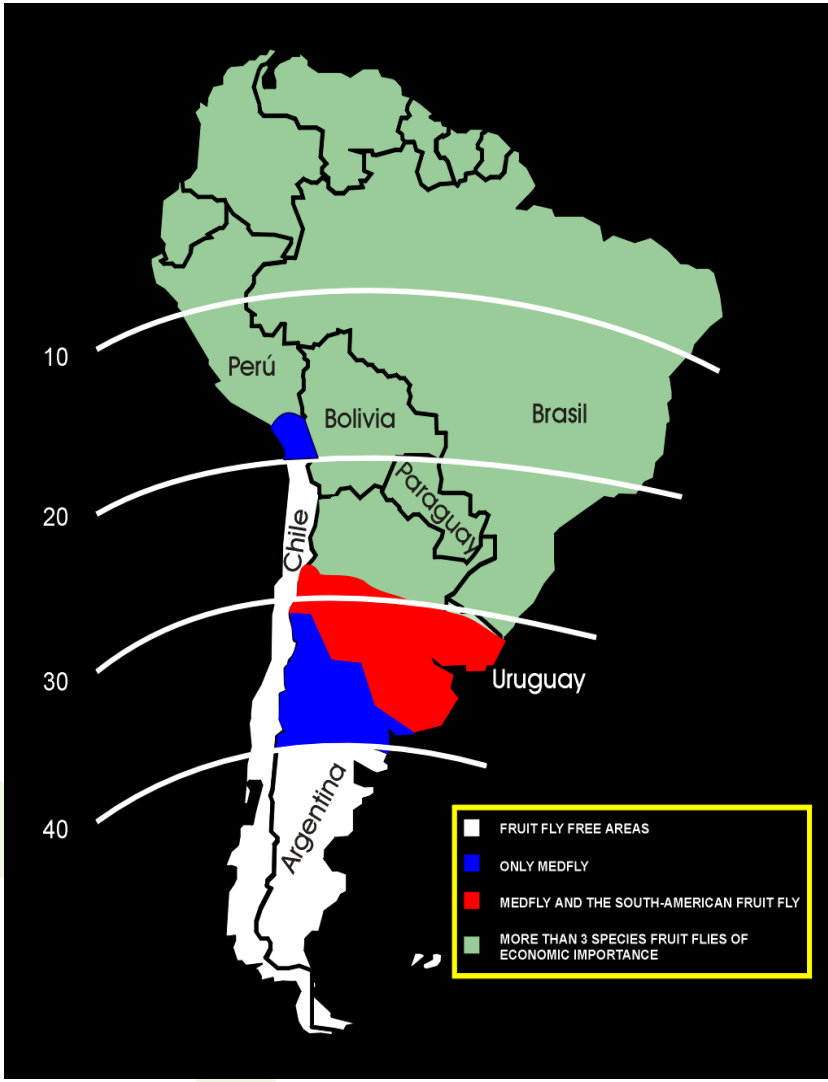
Isolation

- Availability of cost-effective tools to establish and maintain status

Biocontrol

PEST RISK MANAGEMENT OPTIONS TO ESTABLISH AND MAINTAIN A PFA

- ✓ Pest Eradication (Establish PFA)
  The application of phytosanitary measures to eliminate the pest from an area
- ✓ Pest Containment (Maintain PFA)
  The application of phytosanitary measures in and around an infested area to prevent the spread of the pest
- ✓ Pest Prevention (Establish or Maintain PFA)
  Application of phytosanitary measures to prevent entry or establishment of a pest into an area



Sterile Insect Technique (SIT)
Eradication option

Apple and pear production areas in **Patagonia, Argentina**

Eradication of *C. capitata* represents the elimination of costly phytosanitary treatments to most of the 3 million boxes of quality pears and apples that this region exports yearly.

Examples of PFAs in EU

Protected Zones (=PFAs) (examples):

- ✓ *Erwinia amylovora* (protection and export nursery stock)
- ✓ *Globodera pallida*
- ✓ *Rhynchophorus ferrugineus* (palm trees)
- ✓ *Leptinotarsa decemlineata* (potatoes)

Others:

- ✓ *Globodera rostochiensis* and *G. pallida* (export of seed potatoes and flower bulbs from the Netherlands to North-America, for many years already)

CONCLUSIONS on PFAs

- ✓ Today PFAs have been established in a number of countries from where very large volumes of fruits and vegetables are being exported to high value markets without quarantine restrictions.
- ✓ Nevertheless, most of the PFAs have been established for fruit fly pests.
- ✓ Especially in Europe PFAs for other pests have been established and are operational for many years
- ✓ It is critical that decisions on the type of option that will be selected to mitigate pest risk are based on a solid analysis that incorporates technical and economic feasibility.
- ✓ IPPC provides a framework to establish and maintain PFA.
- ✓ PFA contribute to the UN program of Sustainable Development Goals (SDGs) including: Zero Hunger, Poverty Alleviation, Good Health and Well-Being and Life on Land.

Areas of Low Pest Prevalence (ALPPs)

ALPPs (ISPM 22) can be used:

- As a buffer zone to a PFA
- As part of a process of population suppression aimed at eradication and establishment of a PFA
- Or in combination with Systems Approach

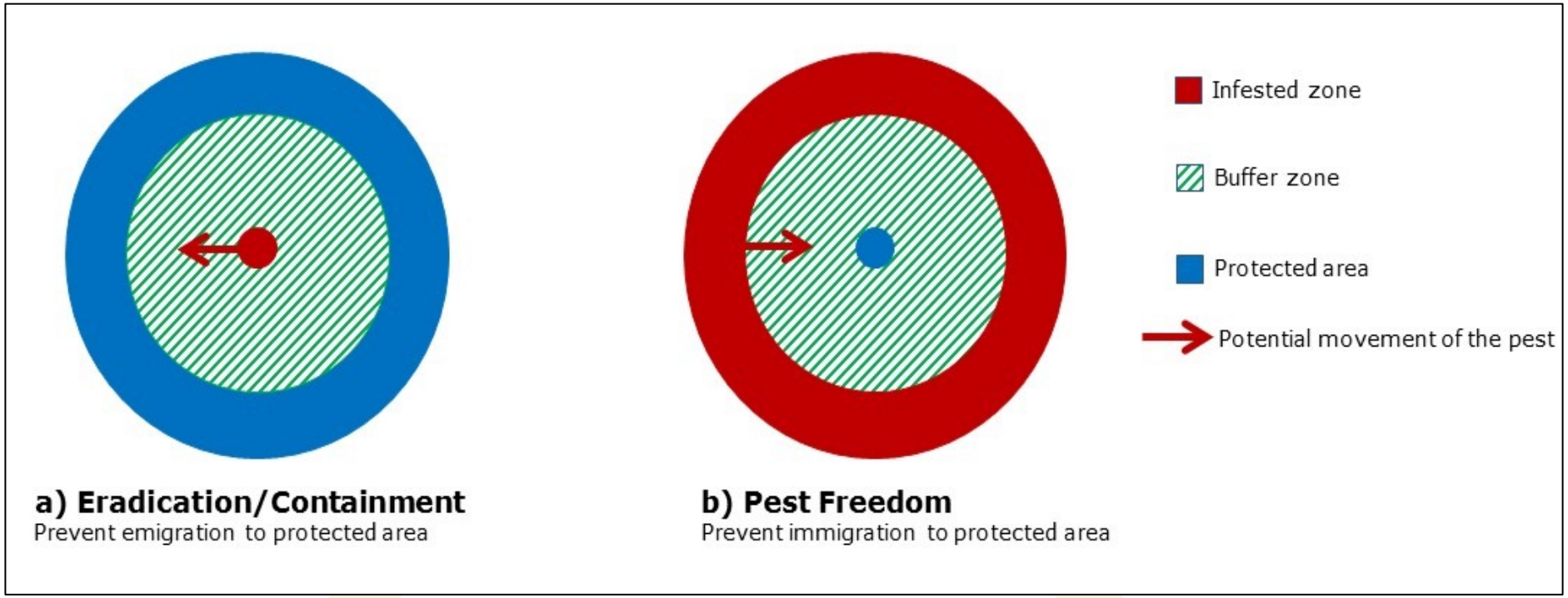
ALPPs and Systems approach offer possibilities to produce (and export) from areas that are not pest free.

It does require research to develop methods and a lot of cooperation between NPPO's of exporting and importing countries.

There are many examples regarding fruit flies, but much less for other pests and diseases.

Implementation of a buffer zone

- buffer zones are designed to minimize the probability of spread of a pest into or out of delimited areas
- the size of a buffer zone depends on the abilities of a pest to natural dispersal and human-assisted spread



Pest Control Practices Alternative to chemical control

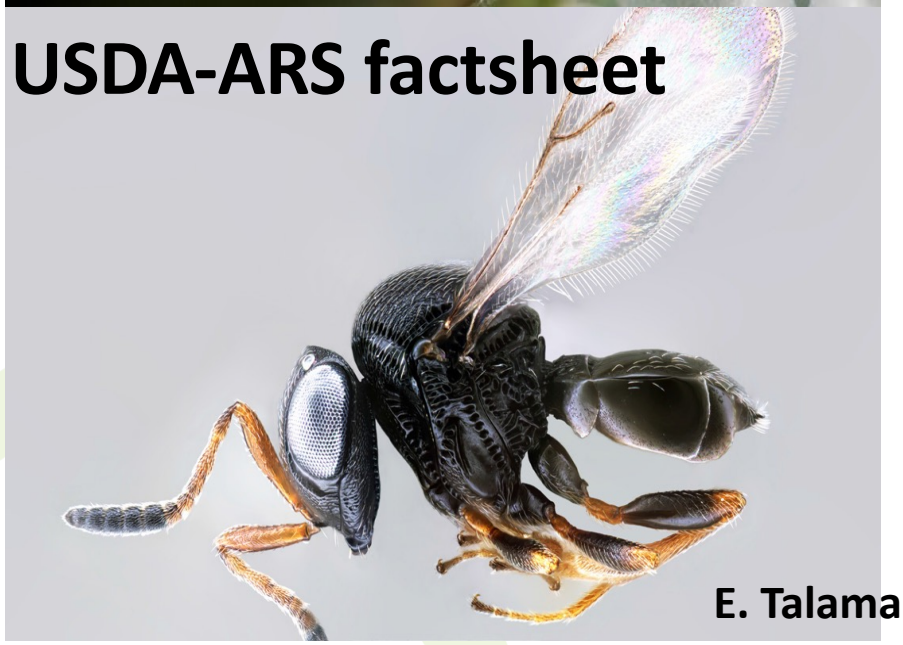
- Biological control (classical, augmentative or conservation)
- Sterile Insect Technique (SIT)
- Use of pheromones (mass trapping or confusion)
- Agronomic practices
- Integrated Pest Management (IPM)
- Example: *Trissolchus japonicus* against BMSB

K. Hoelmer


B. Cutting


E. Talamas

USDA-ARS factsheet


E. Talamas


Tracy C. Leskey, USDA-ARS


Zhong-Qi Yang *et all*, 2009
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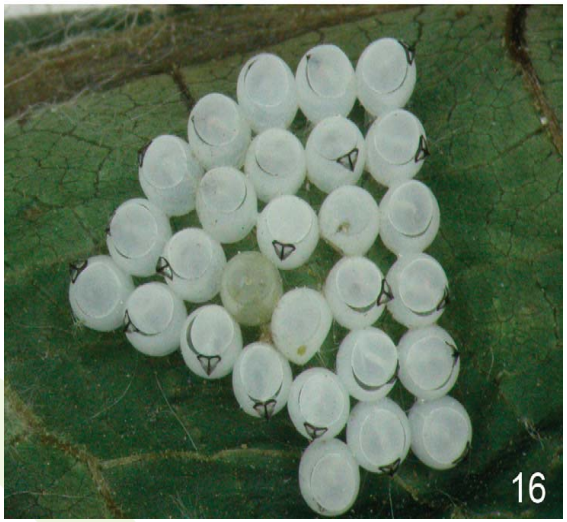
Tracy C. Leskey, USDA-ARS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Zhong-Qi Yang *et all*, 2009

Onion fly (*Delia antiqua*) ALPP (the Netherlands)

- Onion fly is present throughout the European region, so eradication is not an option.
- It is more economical to mass-rear and release, than to eradicate, create a barrier and control new invasions.
- Because the onion flies do not disperse much beyond a particular field, it has proved feasible for this SIT to be realized on an individual grower basis.

Onion fly (*Delia antiqua*) ALPP

- Advantages: pesticide usage is reduced, and development of a pesticide-resistant strain is also much diminished.
- Sterile flies are released from May to September; around 10 000 hectares is treated annually, mainly onions for seed production.
- The SIT approach expenses for onion fly also have been below the cost of chemicals.

IPPC Implementation Resources to Support the PFA Guide

- Market Access
- Transit
- Export Certification
- Import Verification
- Managing Relationships with Stakeholders
- Plant Pest Surveillance
- Guide to Delivering Phytosanitary Diagnostic Services
- Guide to Pest Risk Communication

More IPPC guides and training materials could be found at https://www.ippc.int/en/core-activities/capacity-development/guides-and-training-materials/

Thank you for your attention!