

Critical and current phytosanitary issues for the Seed industry globally

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The seed business today

Product development and seed production in multiple countries

- R&D Centre
- Seed production site
- Distribution/Processing

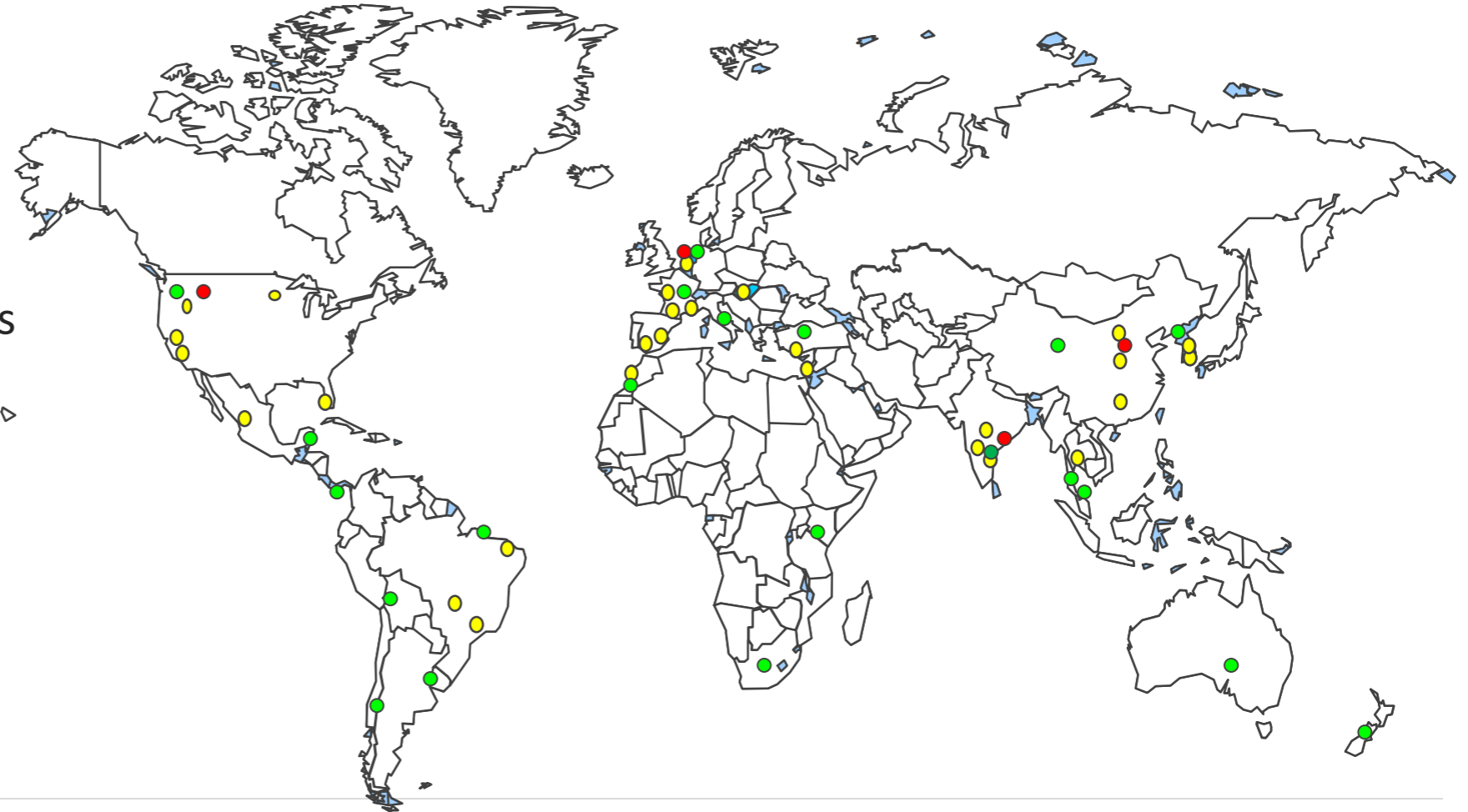
The movement of seed

Germplasm for R&D purposes

Experimental lines and hybrids
for screening purposes

Basic seed for multiplication
purposes, and

Commercial varieties and
hybrids for marketing



Seed Health

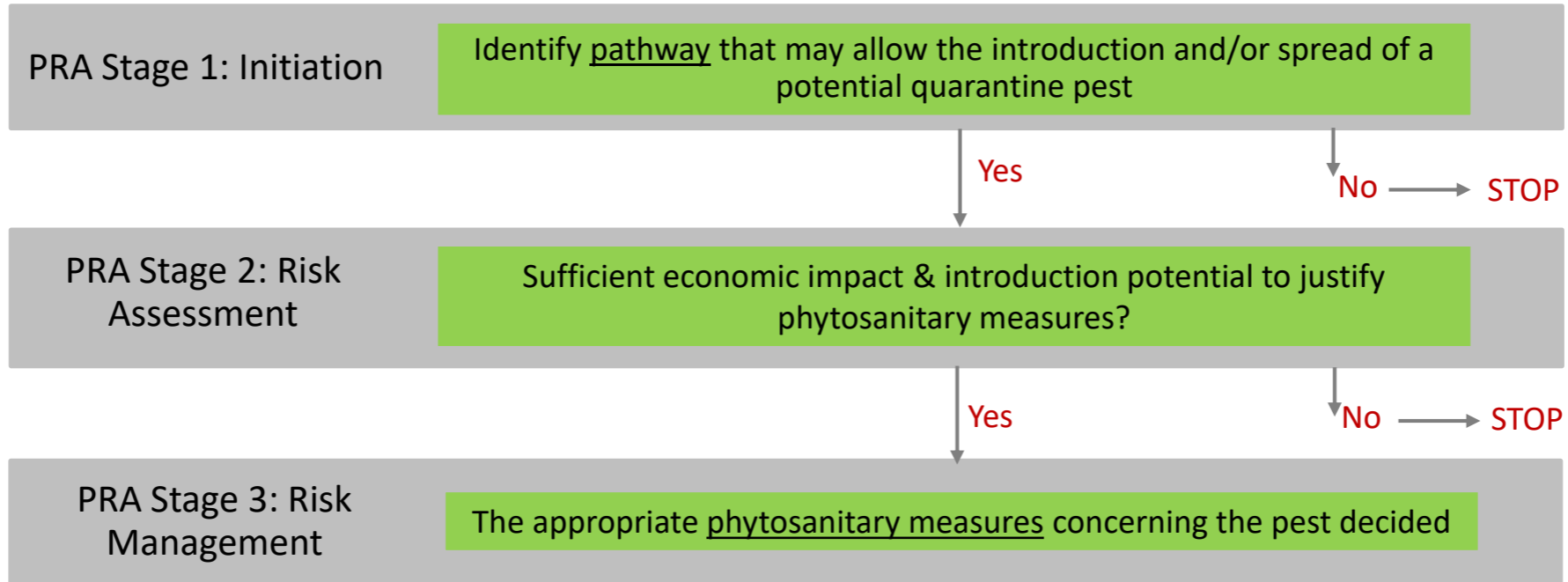
- Seed consumers expect healthy, disease-free seeds
- Disease outbreaks associated with seed borne pathogens can be:
 - Extremely costly
 - Damaging to a company's reputation, and to the industry

Seed Health Programs

- Focused on the prevention, detection and eradication of seed borne pathogens
 - Field, Operations and Lab Testing



Pest Risk Analysis (PRA)



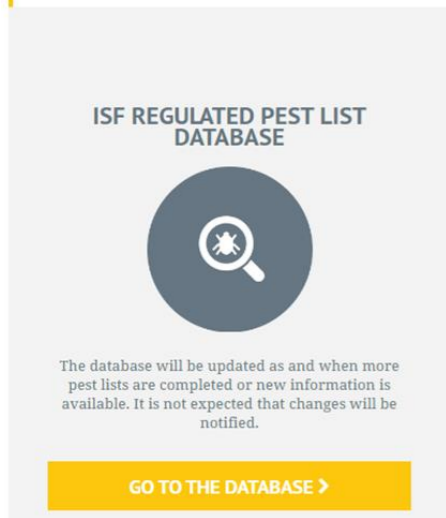
Phytosanitary measure Any legislation, regulation or official procedure having the purpose to prevent the introduction or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests (ISPM 5)

ISF's Regulated Pest List Initiative

The Regulated Pest List Initiative

Facilitate the harmonization of phytosanitary requirements for seed

- by developing a database of information on regulated pests of internationally traded seed species, based on
 - a scientific assessment of whether they are a pest risk
 - the experience of the seed industry in managing this risk



<https://pestlist.worldseed.org/public/pestlist.jsp>

The ISF Regulated Pest List Initiative

- Lists of regulated pests for major seed species that are traded internationally taken from NPPO databases and company information on Additional Declarations required per crop and country; (updated for new pests every 2 years)
- Classification of each pest by whether “seed is a pathway” and remarks based on industry experience and expertise - If seed a pathway, information on seed assay and seed treatment
- Information reviewed by 3 industry experts and documented with references to support or refute the classification
- Feedback mechanism open to experts outside the industry

'*Candidatus Liberibacter solanacearum*'

- There is insufficient scientific evidence that seed to seedling transmission of '*Candidatus Liberibacter solanacearum*' (Lso) occurs in carrot or other Apiaceae species.
- The finding of Bertolini et al. (2015), indicating transmission of Lso haplotype E from seed to seedling in carrot, was not able to be repeated by further scientific studies:
- The seed transmission of Lso haplotypes D and E in carrot was not confirmed using the same seed lots as Bertolini et al. (2015) (Loiseau et al. (2017)).
- Fujikawa *et al.*, 2020 evaluated the possibility of carrot seed transmission of the bacterium using grow-out tests and probability analyses. On the basis of these tests, they concluded that transmission is unlikely in practice.

Equivalency of phytosanitary measures

Importing countries should be willing to accept equivalent phytosanitary measures

- Equivalency of measures increases flexibility in meeting phytosanitary requirements
- Offers countries possibility to set requirements in “or” format:
 - Area freedom “or” field inspection “or” laboratory test
- Countries are encouraged to define multiple equivalent options to meet phytosanitary requirements on basis of PRA and pathway analysis

Harmonization of Additional Declarations - Import countries should work towards requiring recommended standard wording for ADs and exporting countries should use these wording

Standard terms as recommended by ISPM 12	Variations (Total)
1. The shipment is free of (name of pest or soil)	88
2. The shipment is free of (name of pest) based on laboratory analysis	24
3. (name of pest) is not present in (name of country)	17
4. The shipment originates from a pest free area for (name of pest)	34
5. The shipment was produced in a pest free production site for (name of pest) OR This shipment was produced in a pest free place of production for (name of pest)	29
6. The place of production was inspected during the last vegetative period and found free of (name of pest)	51
7. The plants originated from mother plants that were analyzed using an appropriate techniques and found free of (name of pest)	44
8. (Unable to classify)	67
TOTAL	354

Tomato brown rugose fruit virus (ToBRFV)

- Regulated in many countries –different ADs

1. New Zealand

- ‘pest free area’
- ‘pest free place of production’
- testing

2. EU

- Mandatory testing requirement for exporting countries and setting obligations for onshore testing (20% - 100%)
- This type of regulation goes against the principles of IPPC because it does not show confidence on the NPPOs of the exporting countries.
- Conflicting datapoints– Indirect Test
- Contradiction with ISPM38 -which calls for flexibility in phytosanitary measures for seed movement

Technical areas of expertise of seed industry

- Diagnostic protocols:
 - ISHI protocols
 - Seed as a pathway:
 - Pest lists
 - Seed treatments
 - Treatment and disinfection options for different pests and pest type
- Make best use of industry expertise to promote feasible, harmonized and effective phytosanitary measures

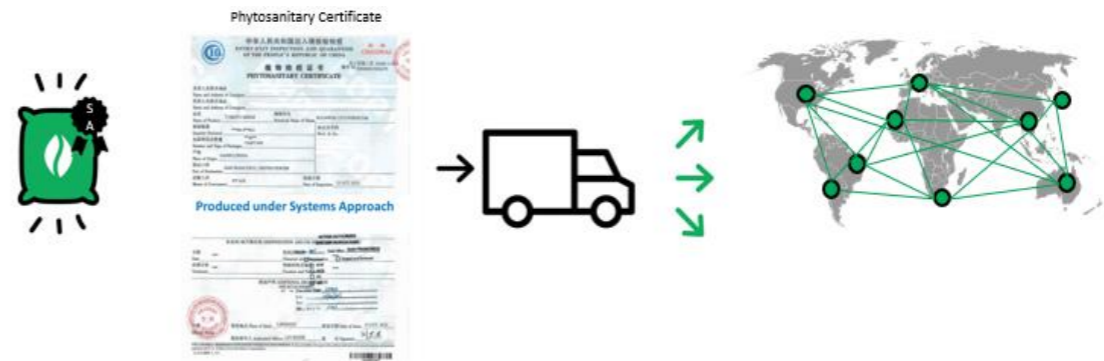
Systems Approach

Challenges in the current trade system

- Consignment-by-consignment certification
- Increasing number of specific pest requirements and variation between NPPOs
- Import requirements can change quickly
- Requirements are not always for pests associated with seeds as a pathway
- Re-export – an important business practice - challenging to fulfill the needs of all countries involved in the chain
- Movement of small lots of seeds for research and breeding purposes increasingly difficult

Systems Approach as possible solution

- Approved companies produce ‘Systems Approach-seed’
- Multilateral acceptance: seeds move freely between all countries where a systems approach has been agreed
- Phytosanitary certificates without the specification of individual pests
- An alternative option for countries to participate



Advantages of Systems Approach

Long term solution

- instead of ad hoc solutions per country

More efficient and predictable framework for the international movement of seed

- global harmonization
- reduced workload NPPOs

Pro-actively addresses issues with emerging pathogens

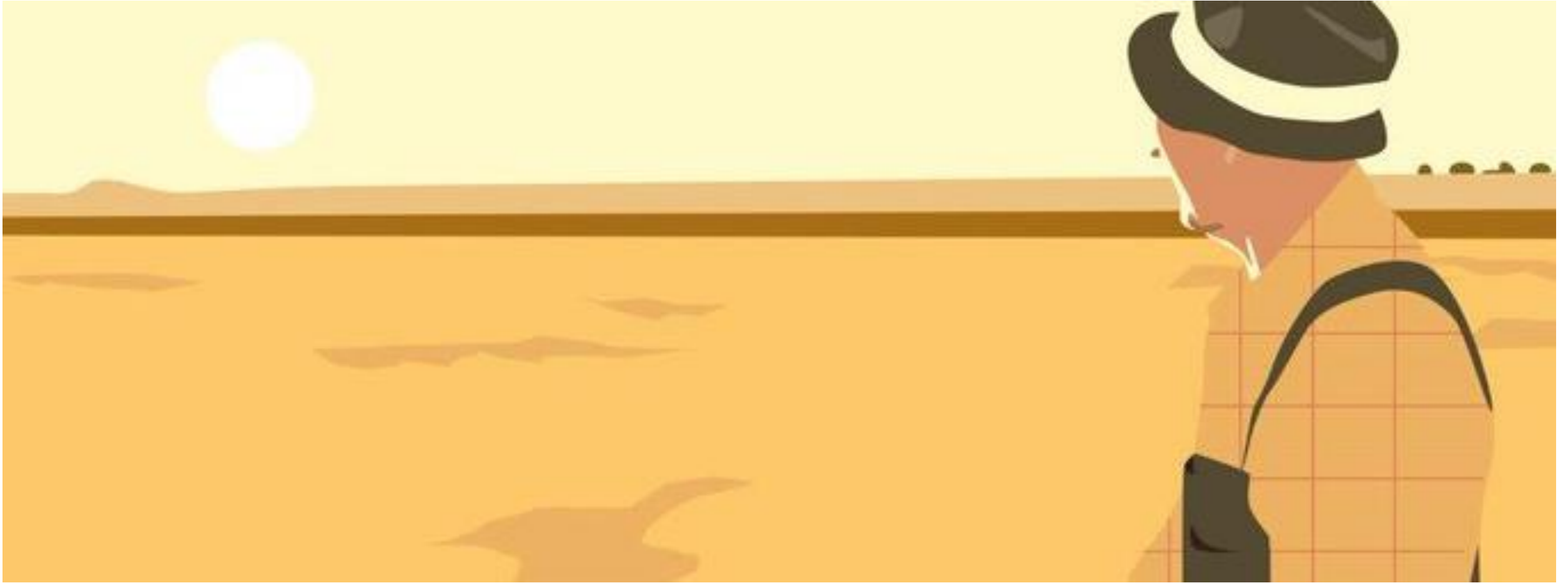
- risk mitigation for one bacterium = potential for all bacteria

COVID-19

Phytosanitary Certificates:

- Delays on the issuance of phytosanitary certificates. Although, some governments have made alternatives arrangements for sending and accepting phytosanitary certificates via different mechanisms to facilitate the export and import of plants and plant products, this is not true in all cases.
- Initiatives such as **ePhyto** solution has seen a surge on adoption and implementation as online tools are now recognized as more versatile than the current paper systems.
- ISF would like to remind all that the adoption of economic policies of restricting imports will seriously impact food security across many countries especially those already suffering of food shortage as a result of the pandemic.

FINAL THOUGHTS





Seed is Life