



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Introducing compliance-based inspection protocols to Australia's biosecurity system

Susie Hester^{1,2} and Anthony Rossiter³

¹University of New England (UNE): UNE Business School, Armidale NSW, Australia

²Centre of Excellence for Biosecurity Risk Analysis (CEBRA): School of Botany, University of Melbourne, VIC Australia

³Victorian Department of Treasury and Finance and Centre for Market Design: East Melbourne, VIC, Australia.

Contributed presentation at the 60th AARES Annual Conference,
Canberra, ACT, 2-5 February 2016

Copyright 2016 by Author(s). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Introducing compliance-based inspection protocols to Australia's biosecurity system

Susie Hester^{1, 2} and Anthony Rossiter³

¹**University of New England (UNE):** UNE Business School, Armidale NSW, Australia

²**Centre of Excellence for Biosecurity Risk Analysis (CEBRA):** School of Botany, University of Melbourne, VIC Australia

³**Victorian Department of Treasury and Finance and Centre for Market Design:** East Melbourne, VIC, Australia.



Inspection processes – past, present & future

- Australia is changing the way it undertakes inspections
- Past: **traditional regulation**
 - treats all consignments on a pathway as posing the same risks to Australia's biosecurity.



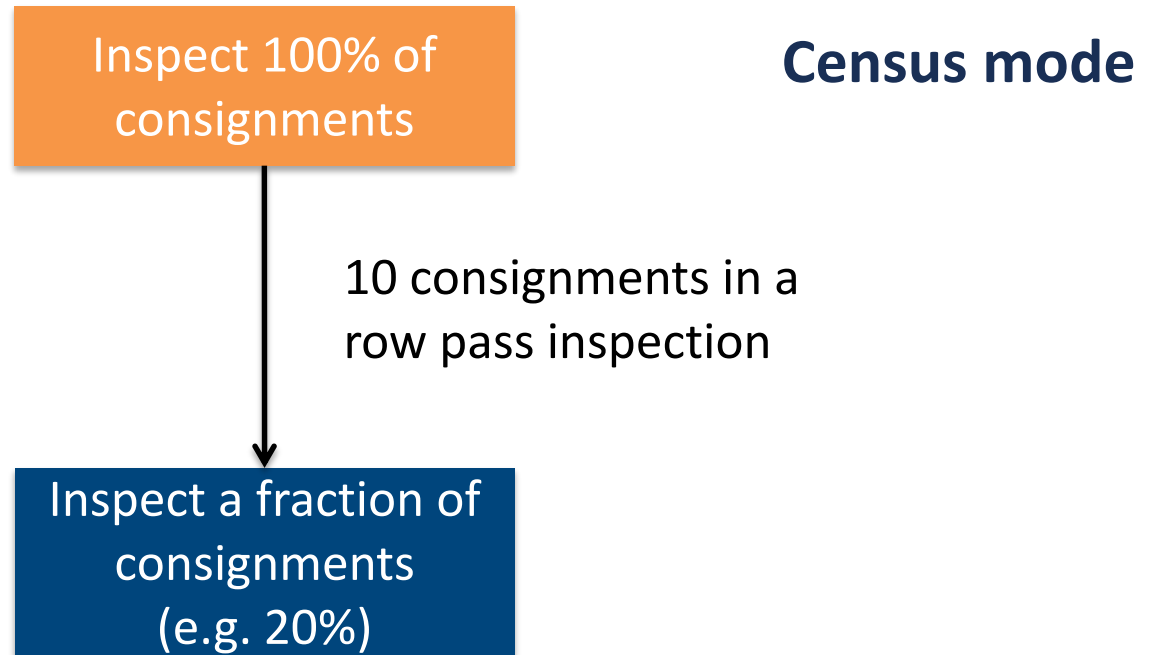
Inspection processes – past, present & future

- Australia is changing the way it undertakes inspections
- **Past: traditional regulation**
 - treats all consignments on a pathway as posing the same risks to Australia's biosecurity.
- **Present: risk-based regulation**
 - recognises the different levels of risk posed by consignments on a pathway and by importers.
 - reward 'good' importers with less inspection
 - Continuous sampling plan family of algorithms (CSP-1, CSP-3) where **Inspection frequency** is the focus



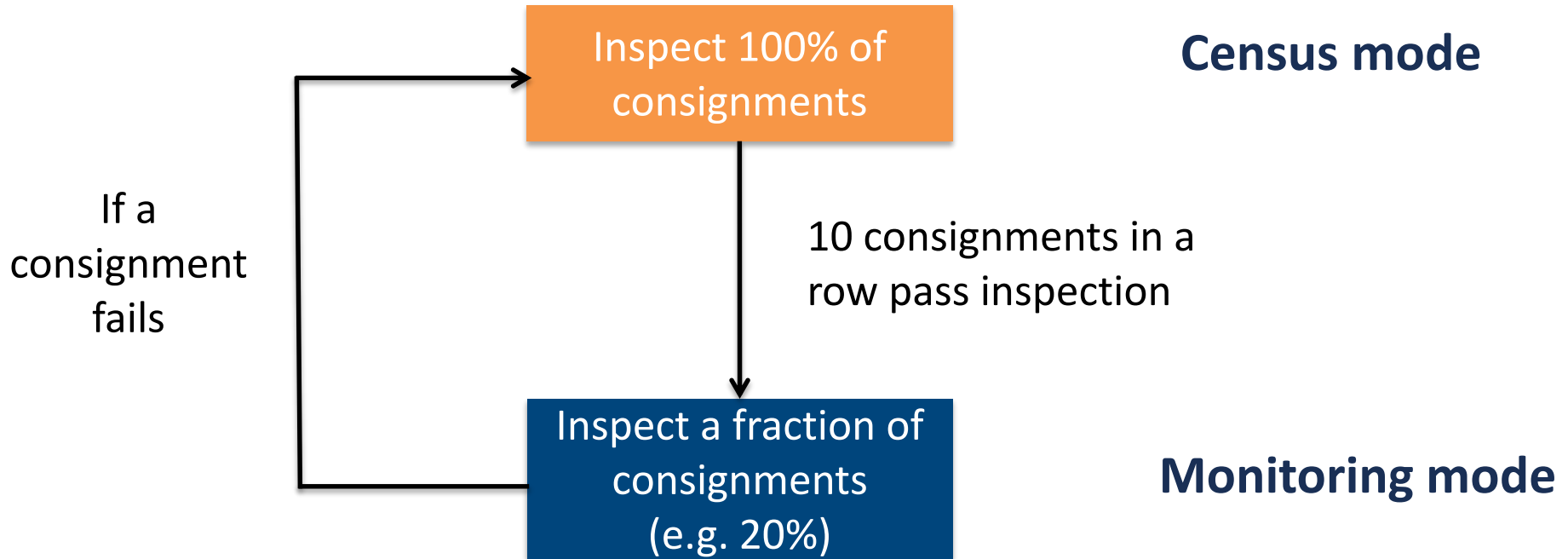
Example of risk-based regulation:

- CSP-1



Example of risk-based regulation:

- CSP-1



Example of risk-based regulation:

- CSP- 3 (CBIS)

Inspect 100% of consignments

Example of risk-based regulation:

- CSP- 3 (CBIS)

Inspect 100% of consignments

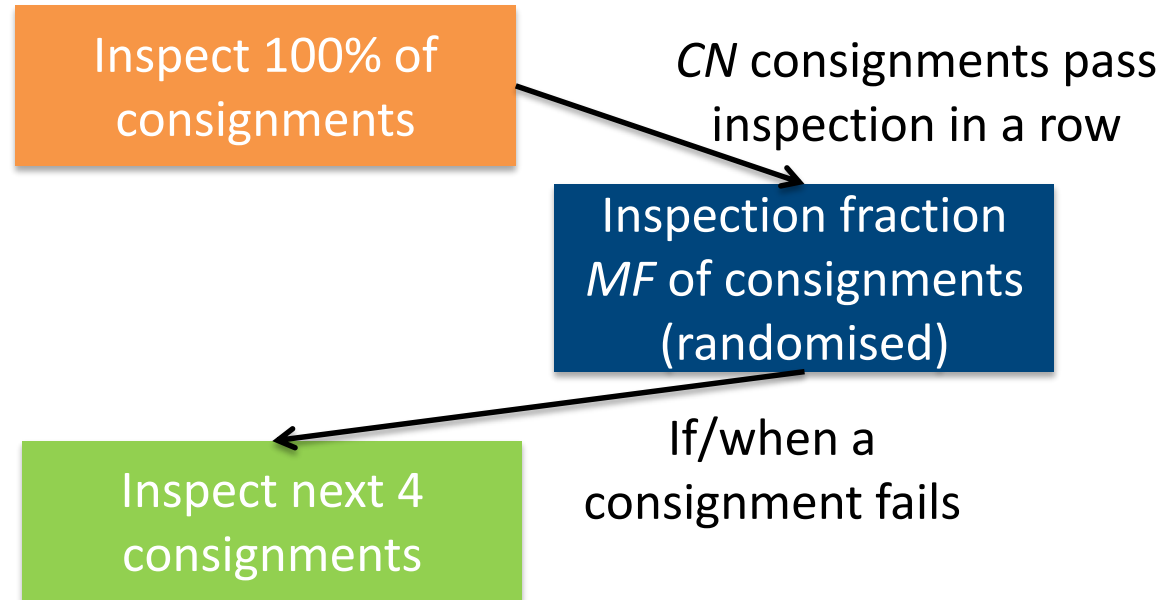
CN consignments pass inspection in a row

Inspection fraction
MF of consignments
(randomised)

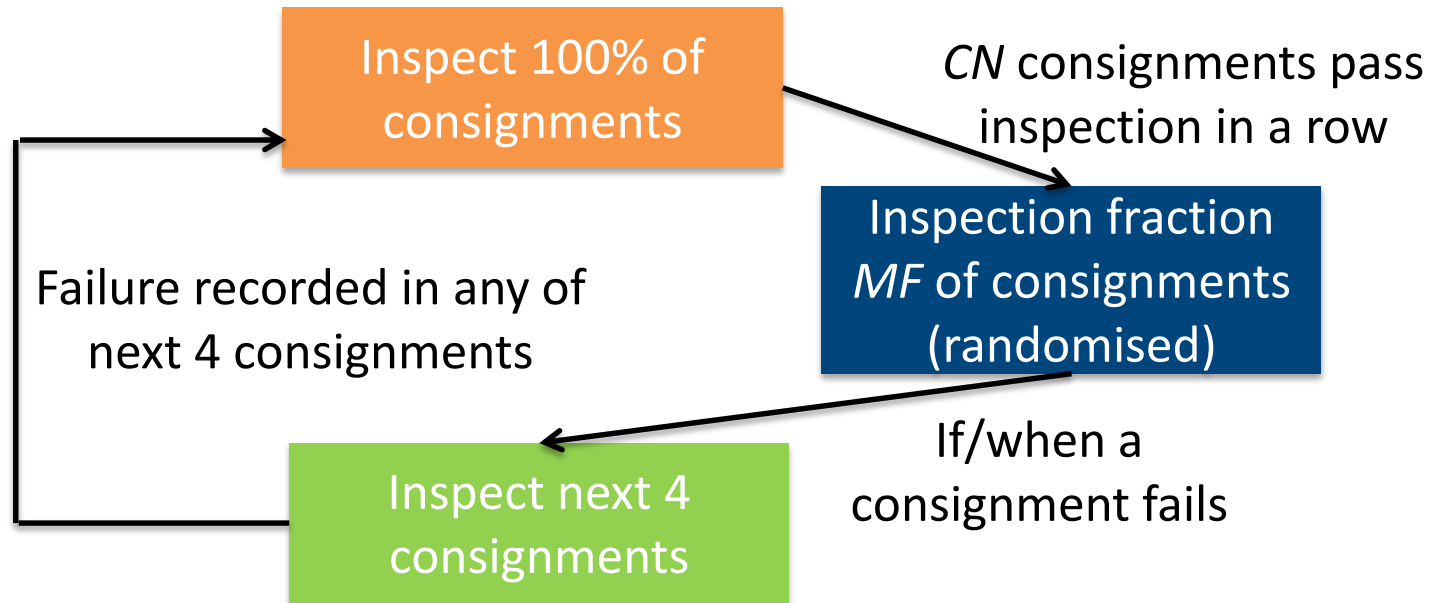


Example of risk-based regulation:

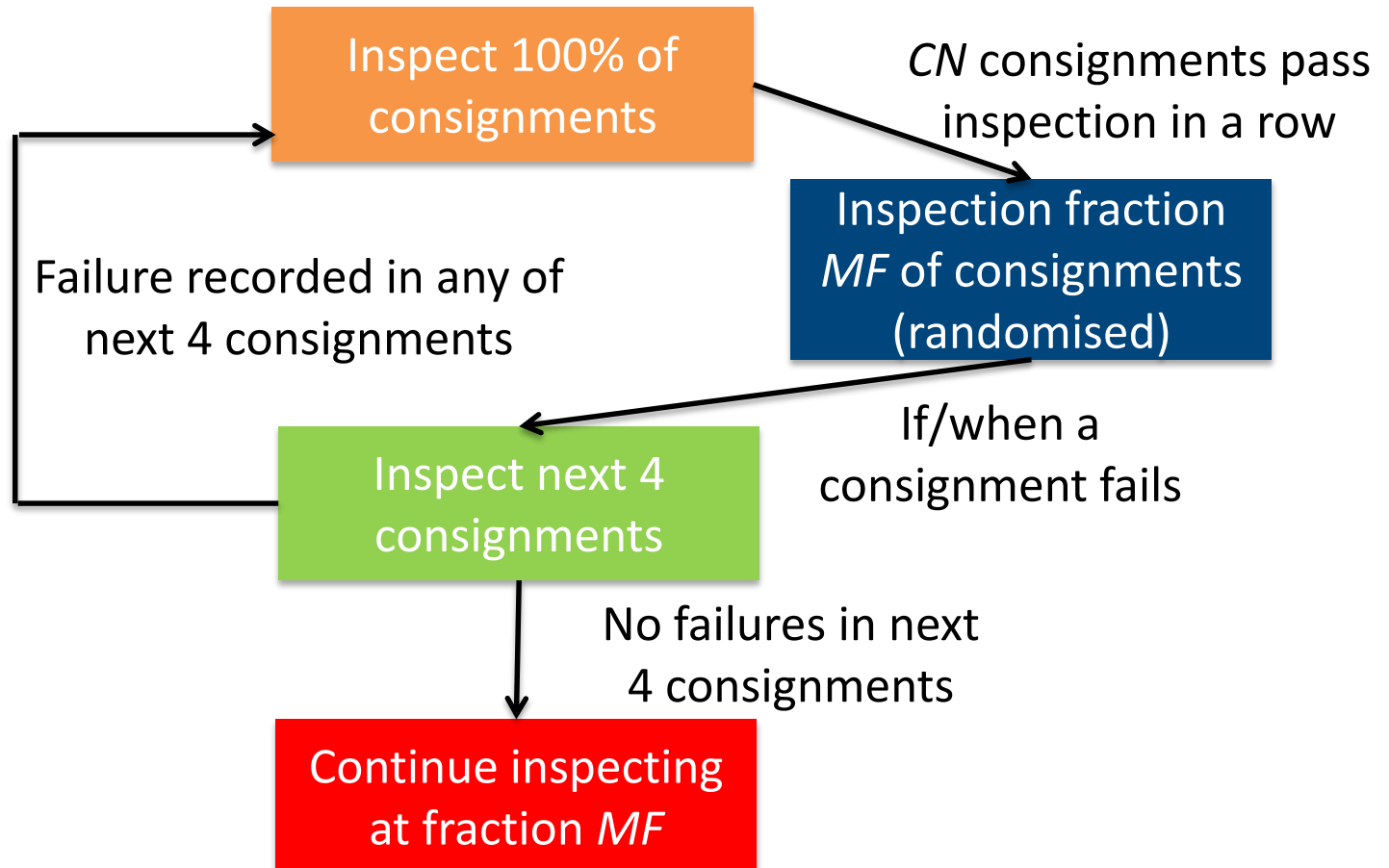
- CSP- 3 (CBIS)



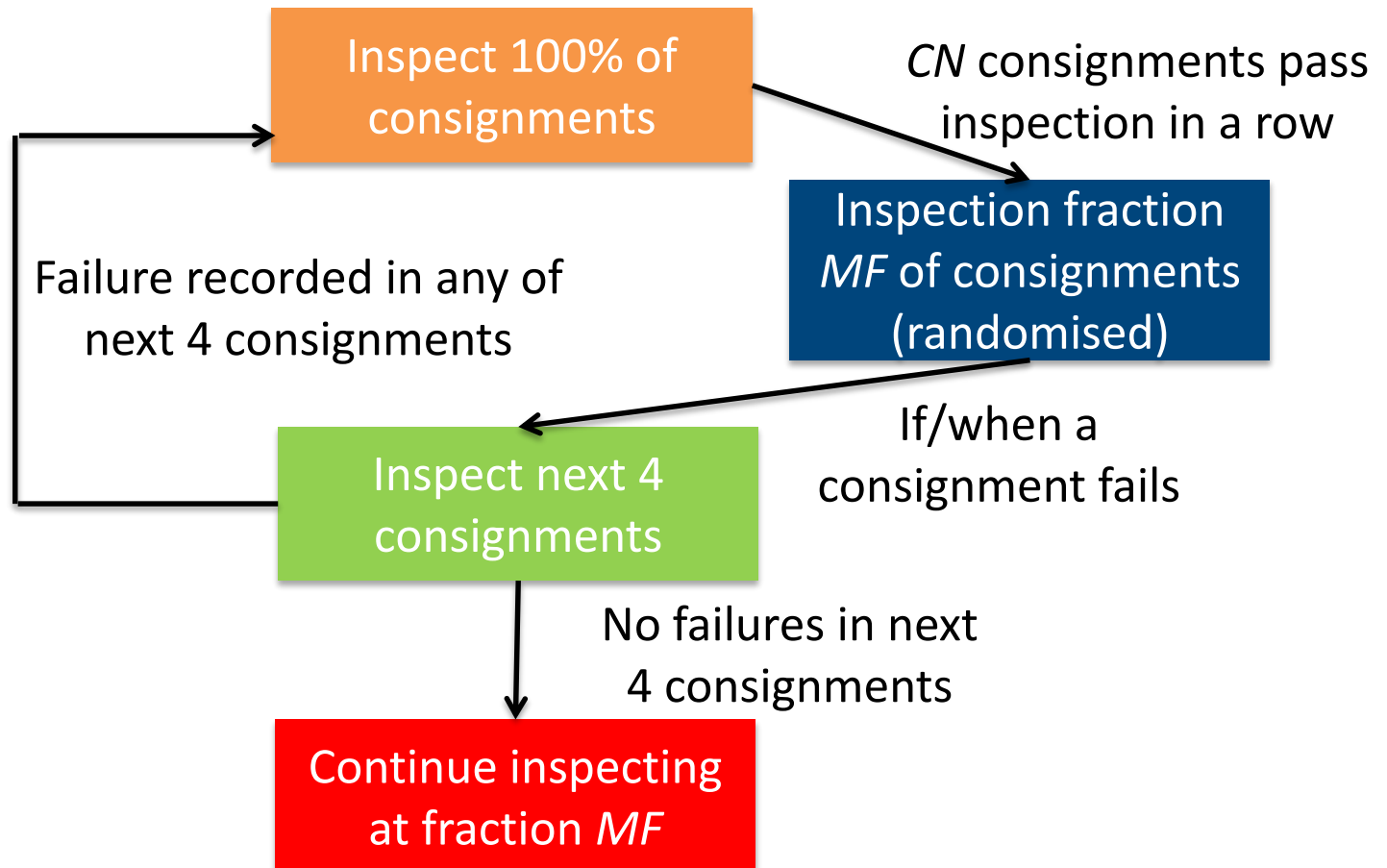
- CSP- 3 (CBIS)



- CSP- 3 (CBIS)

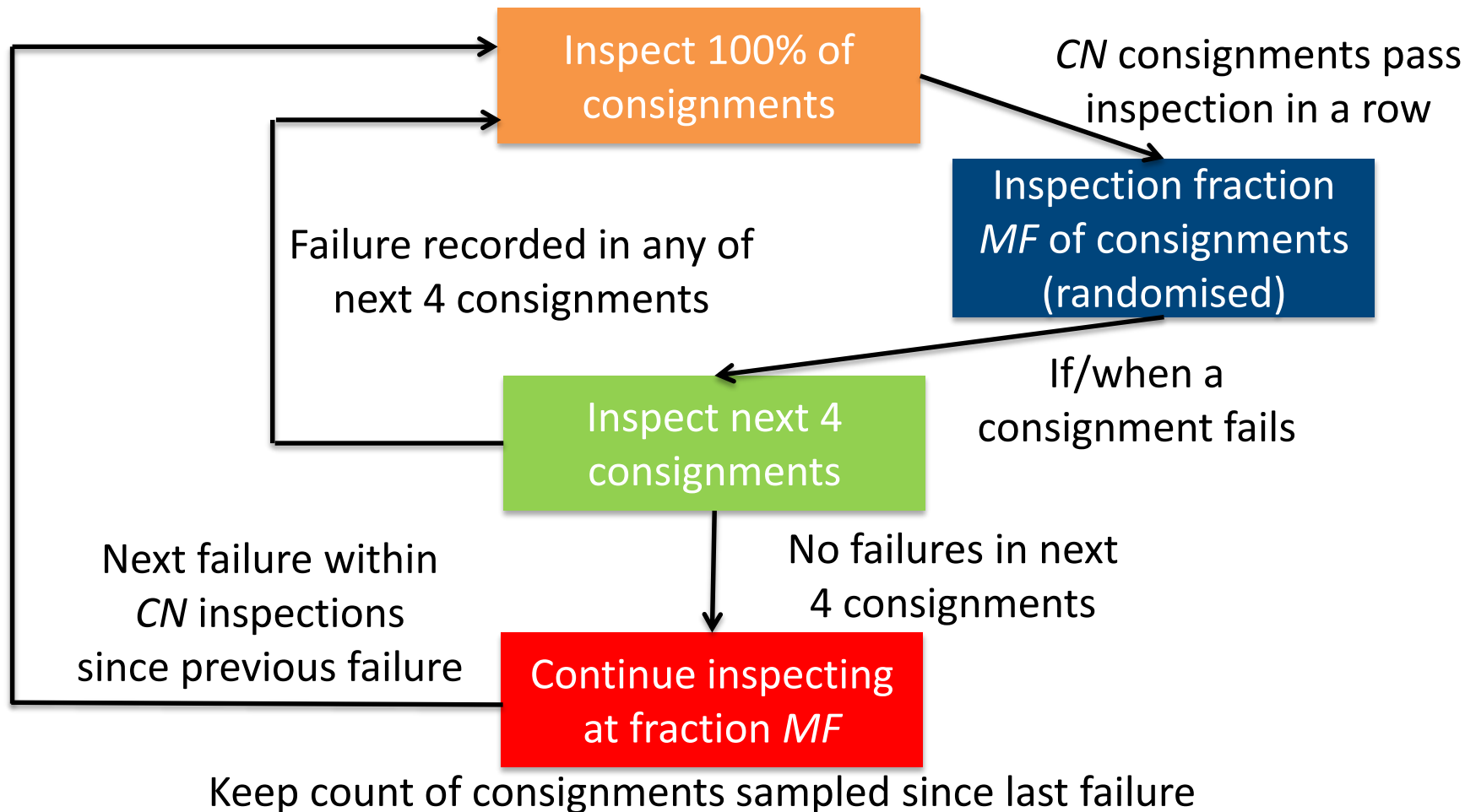


- CSP- 3 (CBIS)

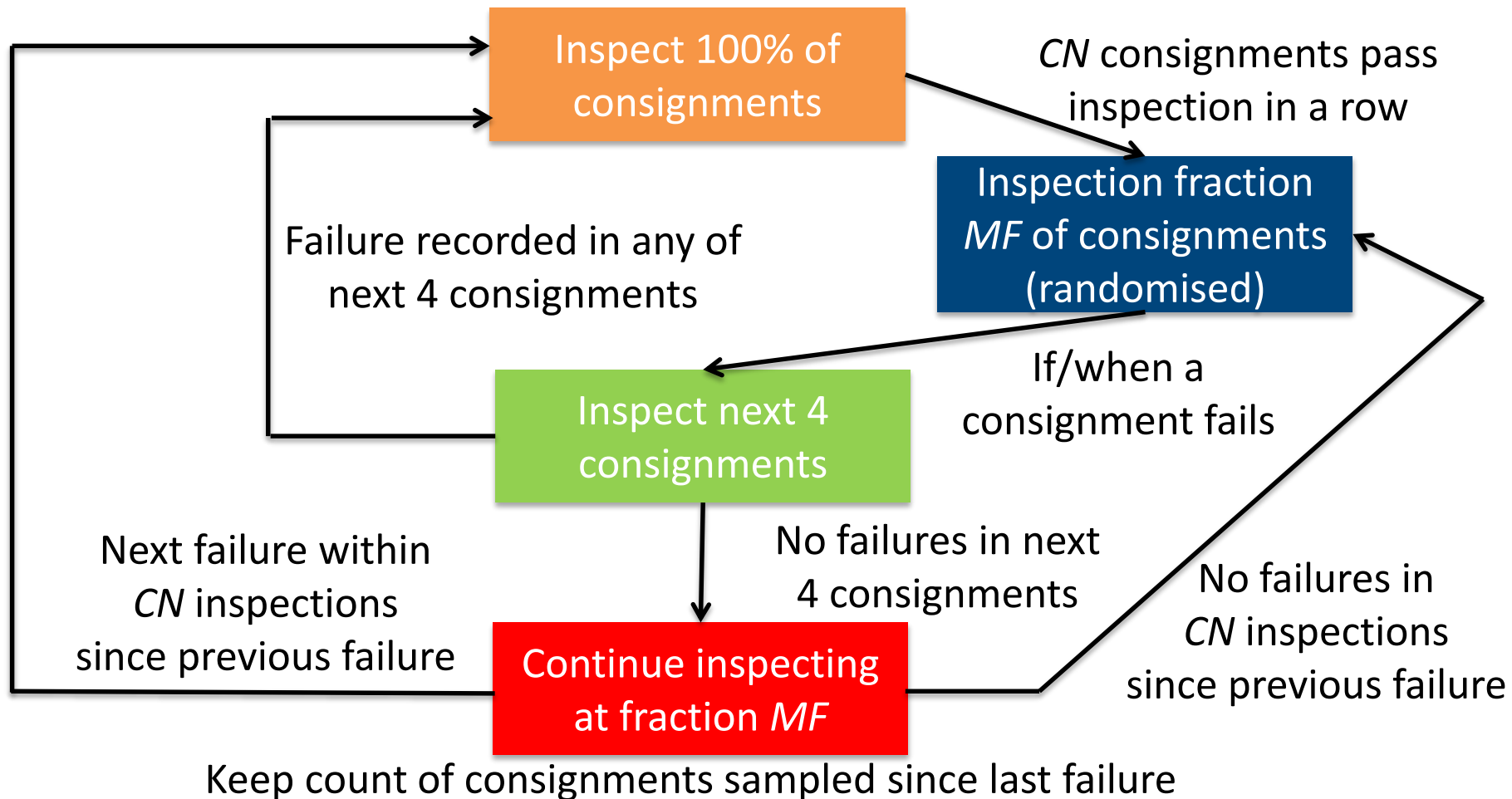


Keep count of consignments sampled since last failure

- CSP- 3 (CBIS)

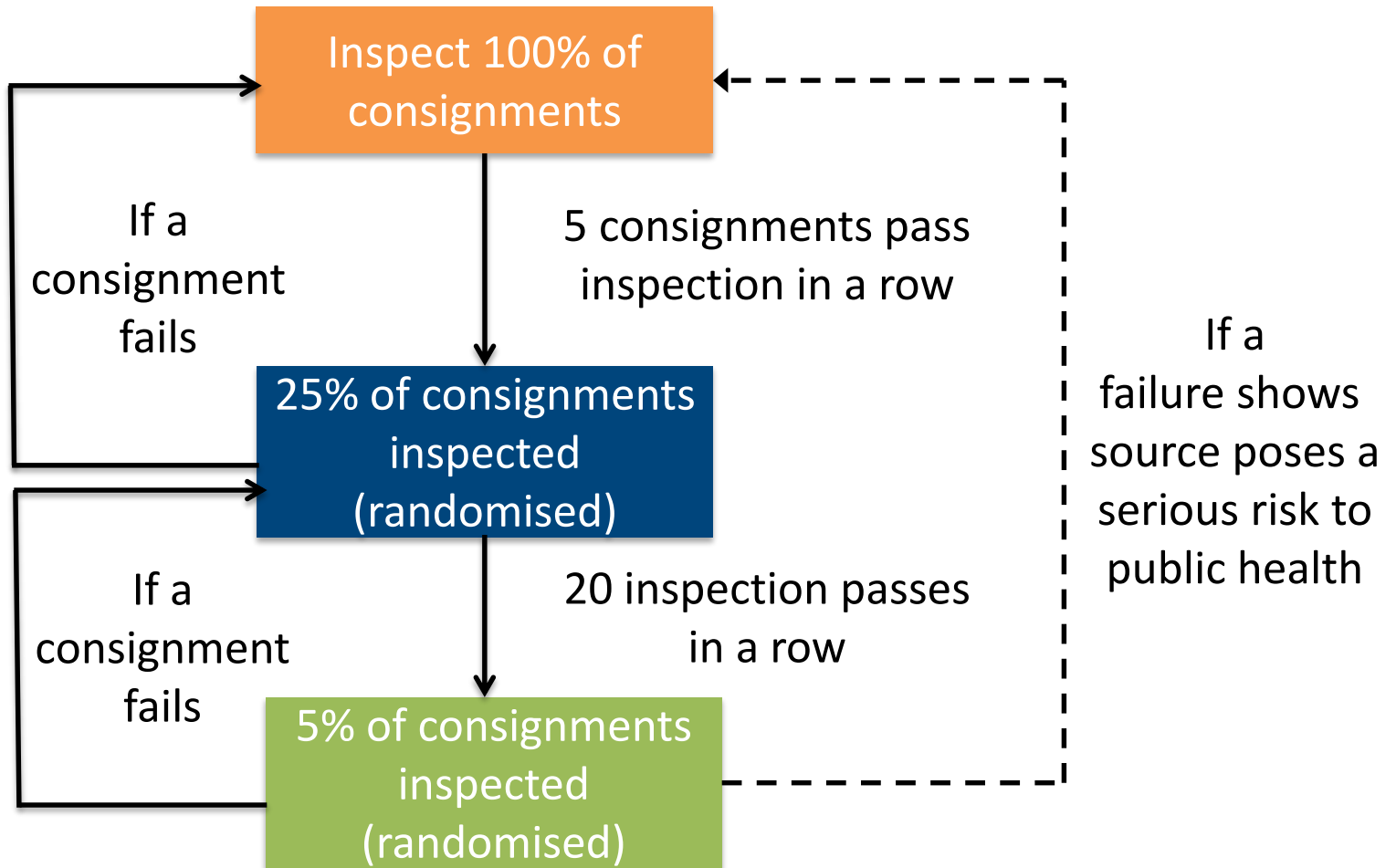


- CSP- 3 (CBIS)



Example of risk-based regulation:

- Imported Food Inspection Scheme



Inspection processes – past, present & future

- Australia is changing the way it undertakes biosecurity inspections
- Past: **traditional regulation**
 - treats all consignments on a pathway as posing the same risks to Australia's biosecurity.
- Present: **risk-based regulation**
 - recognises the different levels of risk posed by consignments on a pathway and by importers.
 - reward 'good' importers with less inspection
 - Continuous sampling plan family of algorithms (CSP-1, CSP-3) where **Inspection frequency** is the focus



Inspection processes – past, present & future

- Australia is changing the way it undertakes biosecurity inspections
- Past: **traditional regulation**
 - treats all consignments on a pathway as posing the same risks to Australia's biosecurity.
- Present: **risk-based regulation**
 - recognises the different levels of risk posed by consignments on a pathway and by importers.
- The future: **incentive-regulation**
 - Harnesses the incentives for stakeholders to comply



Investigating incentive-regulation:

- CEBRA projects aim to design and trial inspection protocols that encourage compliant behaviour.
- Choice of inspection protocols and pathways informed by:

- Analysis of DAWR's administrative data
- Stakeholder consultation
- Economic theory

CEBRA 1304C

- Economic Experiments

CEBRA 1404C

- Likely trial of protocols on *sphagnum peat moss* and the *vegetable seeds for sowing* pathways

CEBRA 1504C



Acknowledgements



- Gary Stoneham, Victorian Department of Treasury and Finance
- The team at the Department of Agriculture and Water Resources in Canberra, including Jessica Sibley, Christina Aston, Jenni Edwards, Felicity Woodhams and Bo Wang
- Andreas Leibbrandt, Monash University