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Efficiency of anti-sharka control strategies

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What is sharka?

Sharka, caused by the plum pox virus (PPV), is a disease affecting *Prunus* trees. It is transmitted in a non-persistent manner by aphids, and long-distance dispersal is mainly due to human transport of infected plant material. The symptoms include distorted leaves, yellow rings on fruit stones, alteration of fruit shape and chemical content, as well as premature fruit drop in some cases. The costs associated with sharka management have been estimated at 10 billion euros between 1975 and 2005.¹

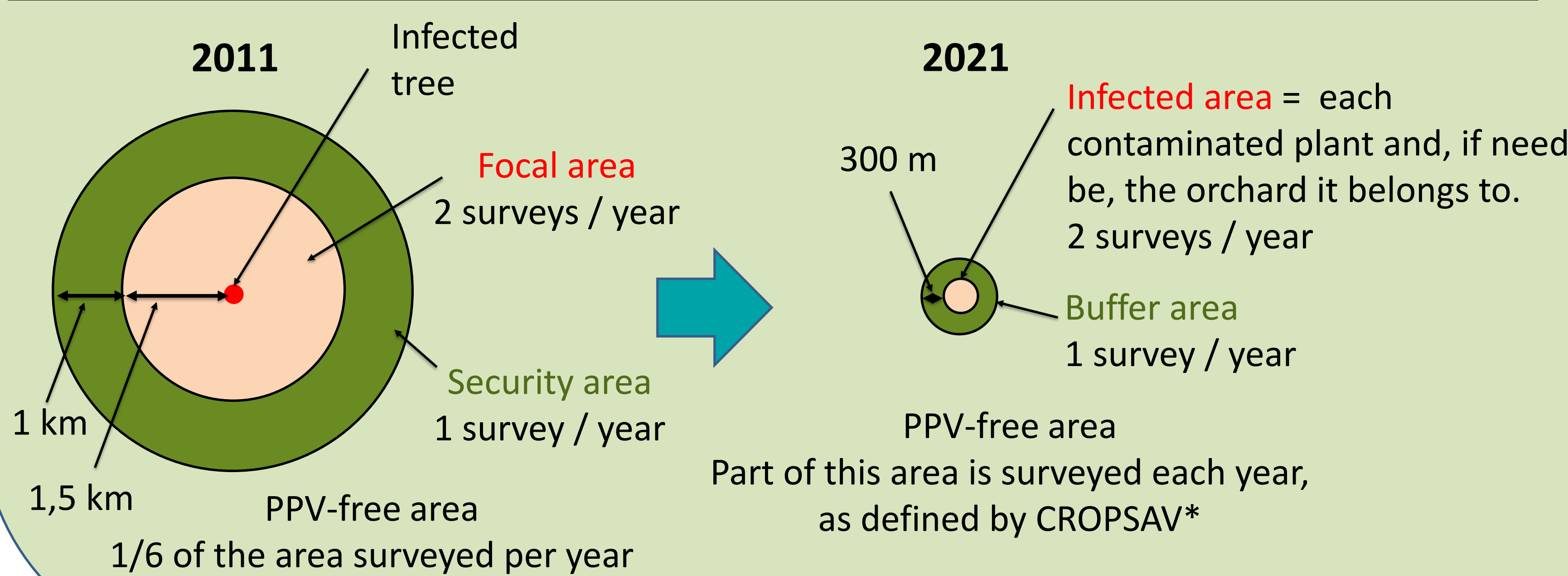


Symptoms of sharka on apricot (top) and plum tree leaf (bottom)

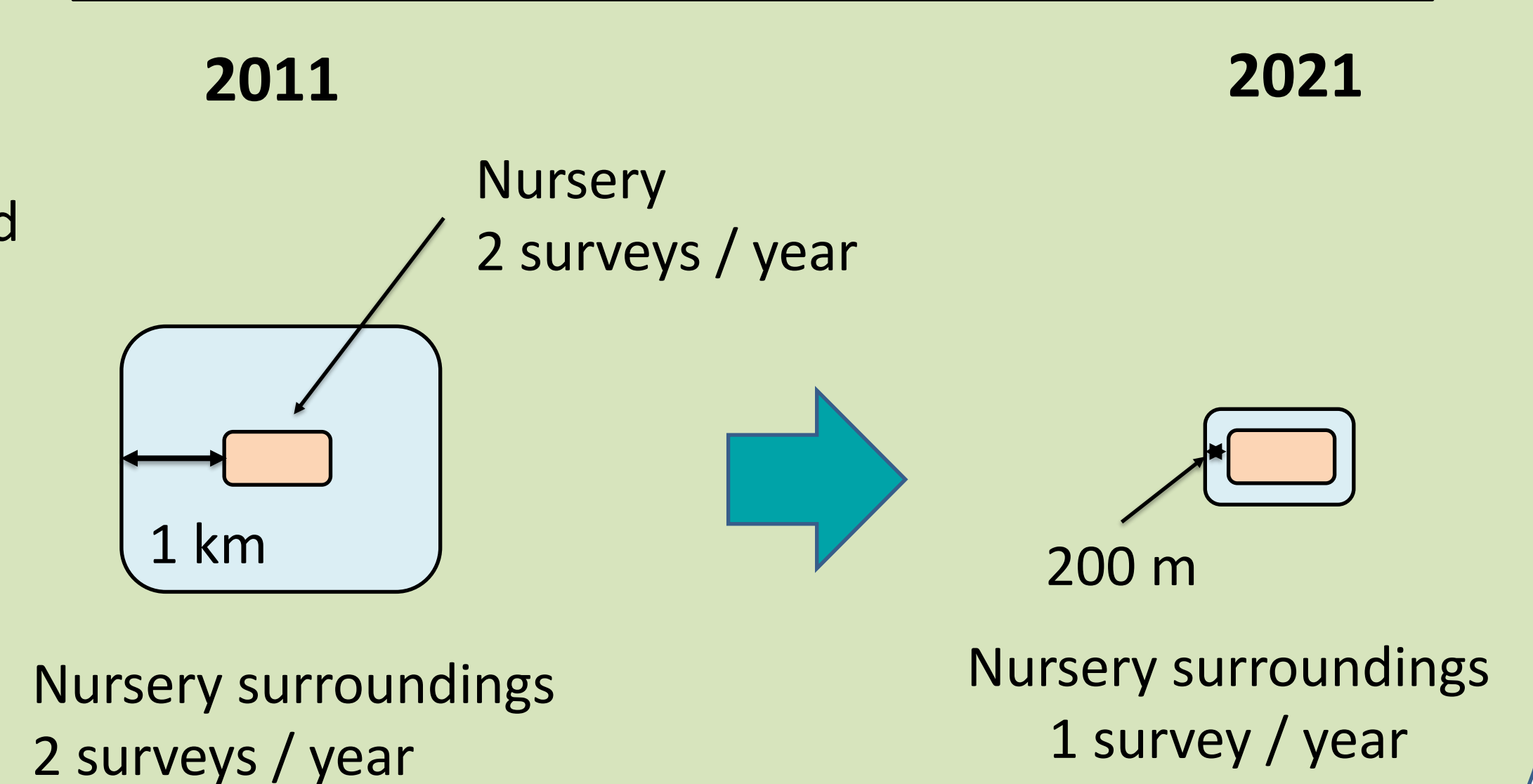
Recent changes in surveillance:

- In 2019 PPV has changed status from Quarantine Pest to Regulated Non-Quarantine Pest.²
- The state aims to transfer the responsibility and cost of surveillance to growers.

Orchards



Nurseries

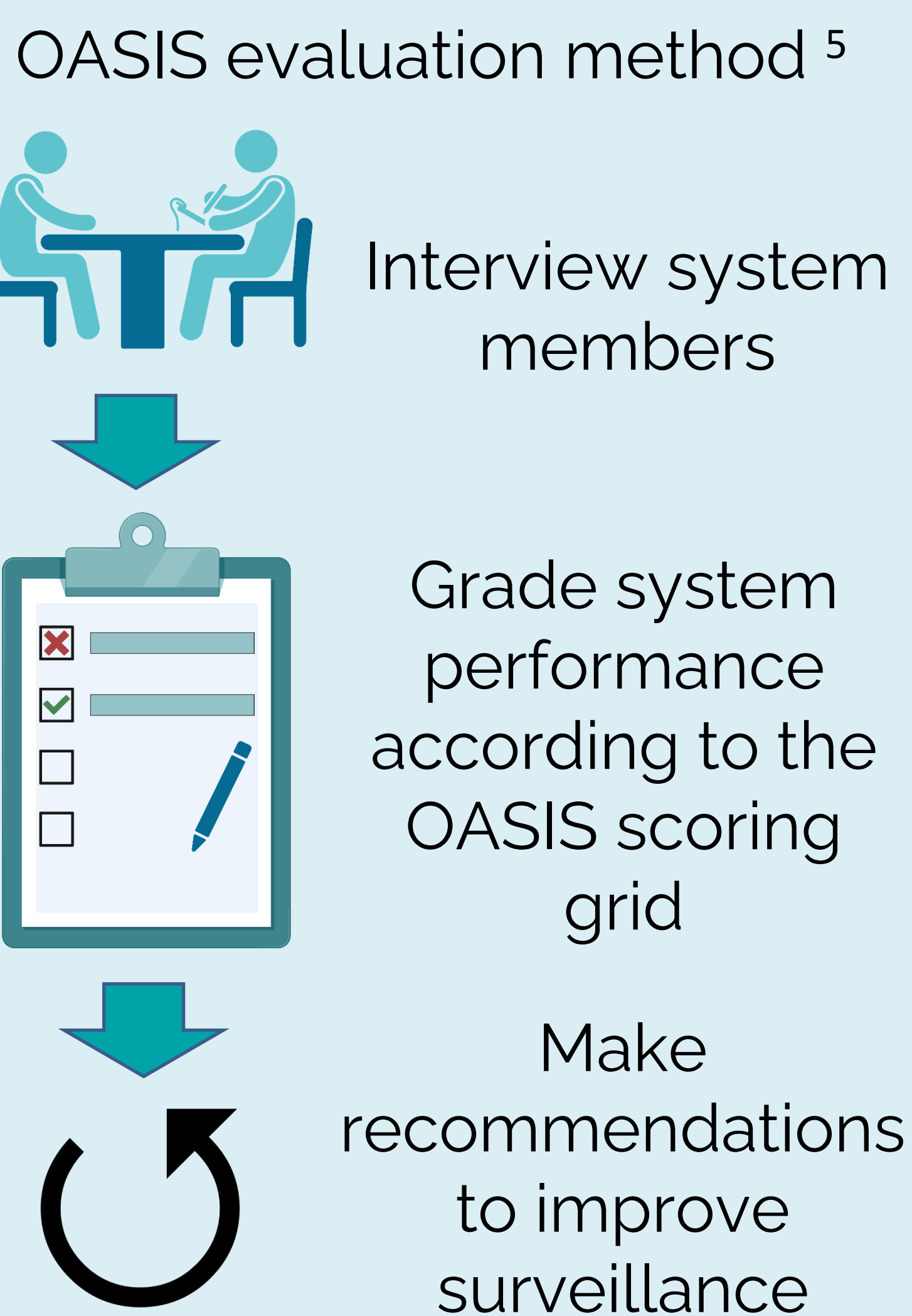


Surveillance areas defined by ministerial decree^{3,4}

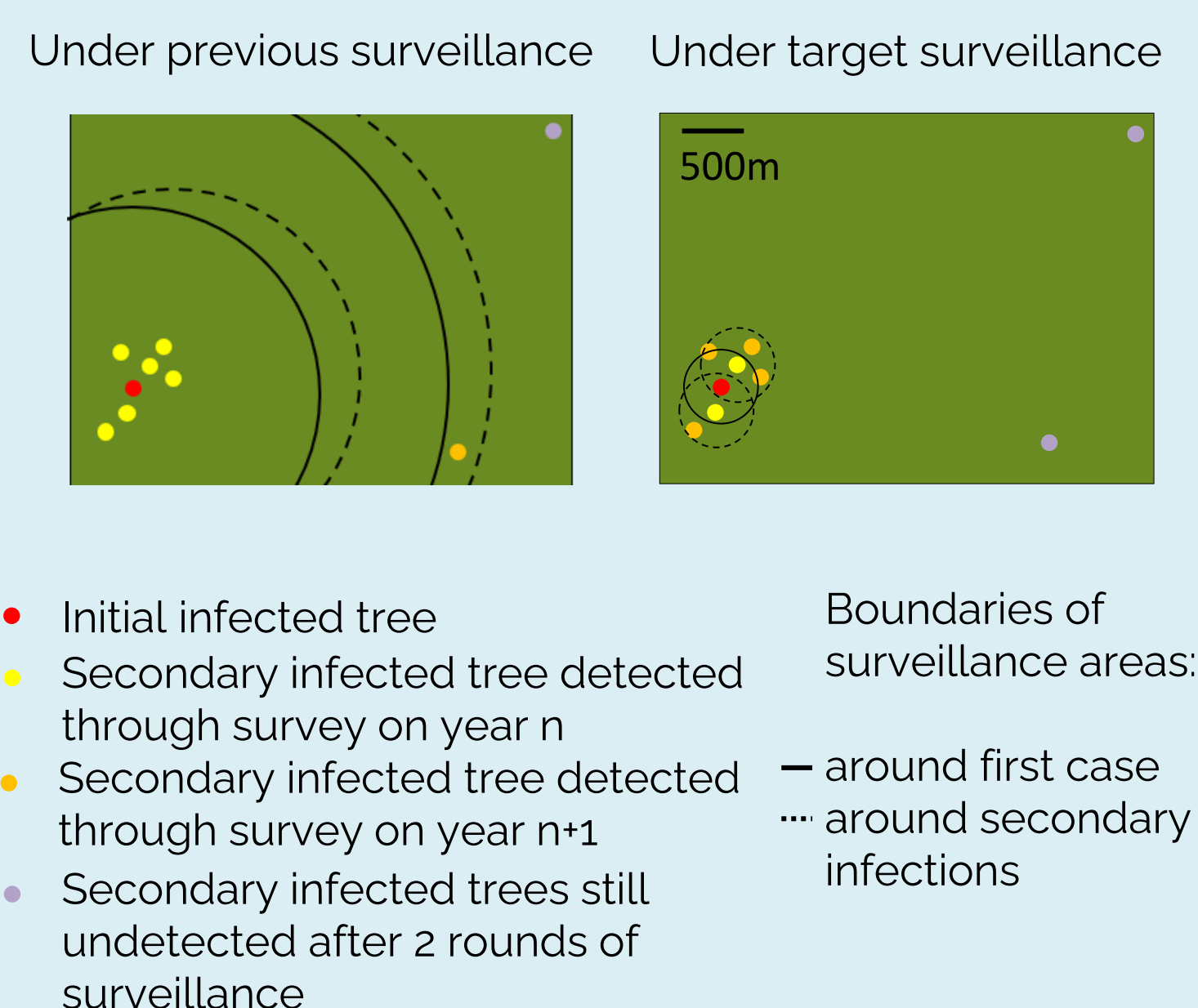
Transfer of surveillance responsibility + Changes in size of surveillance area and frequency

How are these changes going to impact the efficiency of disease management?

I/ How performant is the surveillance system? And in the future?

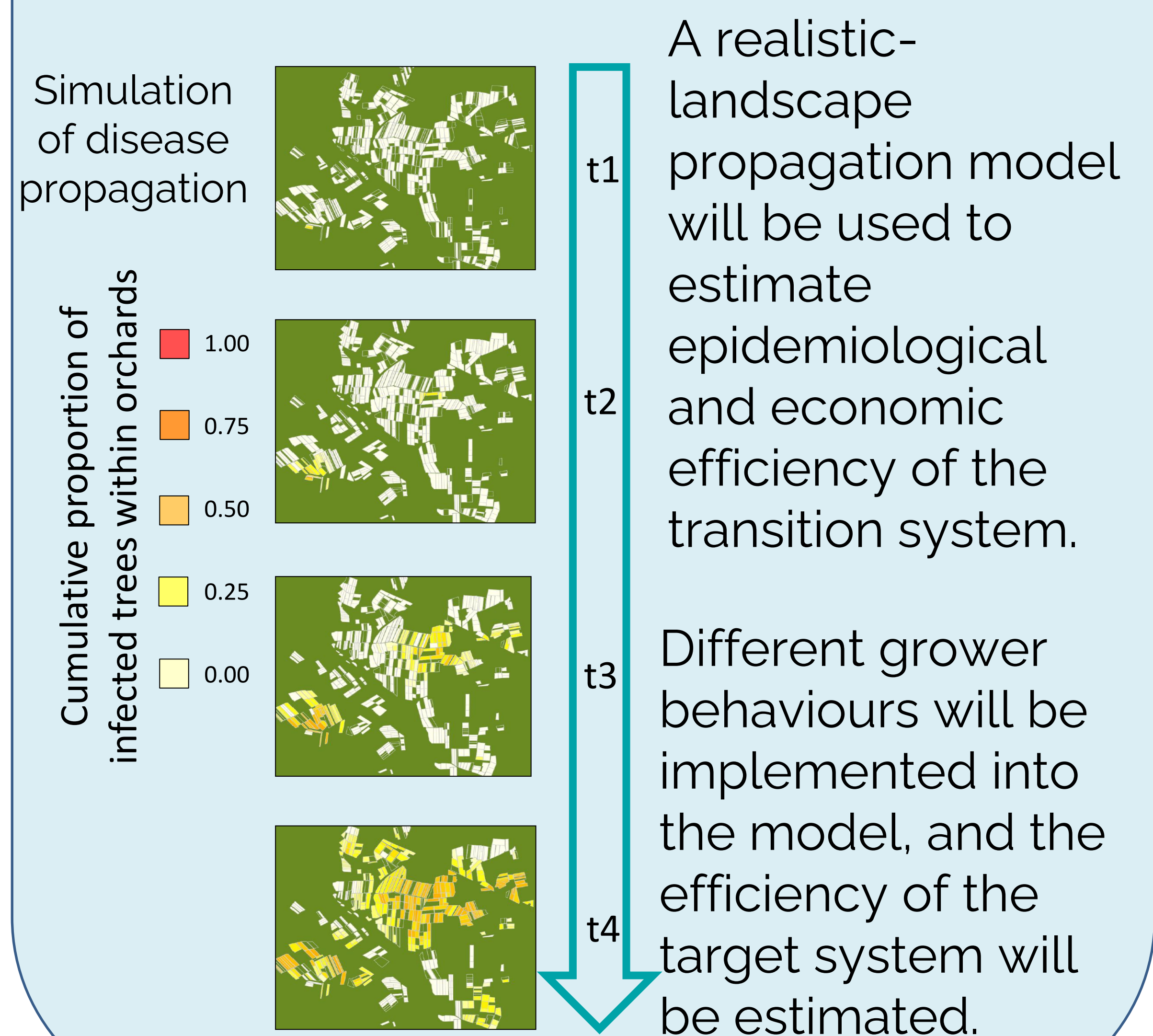


II/ Metrics for measuring control success



We will define metrics that allow comparison of surveillance before and after changes.

III/ Epidemiological and economic efficiency of surveillance



This work should provide i) insight into the efficiency of the different surveillance strategies, and ii) tools for detecting possible limits of the target strategy.

* CROPSAV = Conseils Régionaux d'Orientation de la Politique Sanitaire Animale et Végétale

Literature cited

1 - M. Cambra et al., « Plum Pox Virus and the Estimated Costs Associated with Sharka Disease », EPPO Bulletin 36, no 2 (2006): 202-4, <https://doi.org/10.1111/j.1365-2338.2006.01027.x>
2 - « Règlement d'exécution (UE) 2019/2072 de la Commission du 28 novembre 2019 établissant des conditions uniformes pour la mise en œuvre du règlement (UE) 2016/2031 du Parlement européen et du Conseil, en ce qui concerne les mesures de protection contre les organismes nuisibles aux végétaux, abrogeant le règlement (CE) no 690/2008 de la Commission et modifiant le règlement d'exécution (UE) 2018/2019 de la Commission »

3 - Arrêté du 17 mars 2011 relatif à la lutte contre le Plum Pox Virus, agent causal de la maladie de la Sharka, sur les végétaux sensibles du genre Prunus, JORF n°0067 du 20 mars 2011
4 - Arrêté du 9 juillet 2021 relatif à la lutte contre le Plum pox virus, agent causal de la maladie de la sharka, JORF n°0163 du 16 juillet 2021
5 - P. Hendrikx et al., « OASIS: An Assessment Tool of Epidemiological Surveillance Systems in Animal Health and Food Safety », Epidemiology and Infection 139, no 10 (octobre 2011): 1486-96, <https://doi.org/10.1017/S0950268811000161>