Plant Health Centre
Scotland's Centre of Expertise

Scottish Government
Riaghaltas na h-Alba
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Action Research to gain a deeper understanding of large-scale biosecurity risks to Scotland:

Identifying system leverage points for education, governance and policy in organisations relevant to plant health

Policy Summary

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University of St Andrews

St Andrews Botanic Garden

Animal & Plant Health Agency

Forest Research

Plant Health Centre
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1 Policy Summary

1.1 Introduction

- Some large-scale interventions pose particular biosecurity risks to plant health in Scotland and beyond. Previous Plant Health Centre reports explored some such sectors and identified **hard-to-reach actors** (1,2,3).
- Human behaviours, actions and inactions are key drivers in threats and management of plant pests and pathogens (4). **Organisations and institutions** thus have key roles in determining regulations, norms and knowledge flows of groups of stakeholders involved in plant health (5,6).
- A **participatory and co-design approach** is particularly useful in plant health where there are shared responsibilities amongst multiple stakeholders working on complex, uncertain and dynamic issues and where innovation is required (6,7, 8).
- The interactions between people, plants and pests/pathogens create **systems** in which key nodes, interactions and leverage points can be identified (9,10).
- Plant health requires the **knowledge, skills and competencies** to develop and enact adaptive biosecurity processes in all sectors, through awareness, education and training, often within organisations, as part of systems and to change the systems themselves (11, 12).

1.2 Aim and Objectives

Aim: To develop a generic system framework and identify leverage points for change within key selected sectors (*garden design* and *landscape architects/construction)*.

Objectives:

1) To develop an approach around Participatory Action Research, Education and Systems Thinking for future stakeholder engagement.
2) To identify specific partnerships and pathways to influence hard-to-reach actors.

1.3 Research Undertaken

- A co-design approach with a small purposive sample of key informants.
- Eight activities including online or in-person participatory workshops with sector experts or organisational representatives and members to identify a generic system framework and sector/organisational specific leverage points.

1.4 Main Findings

A generic system framework was developed that identified key organisational characteristics, processes external to the organisation and internal organisational processes (Figure 1). This system was explored for garden designers and landscape architects and key leverage points were identified for each sector that could lead to positive change regarding plant healthy practices (Table 1).

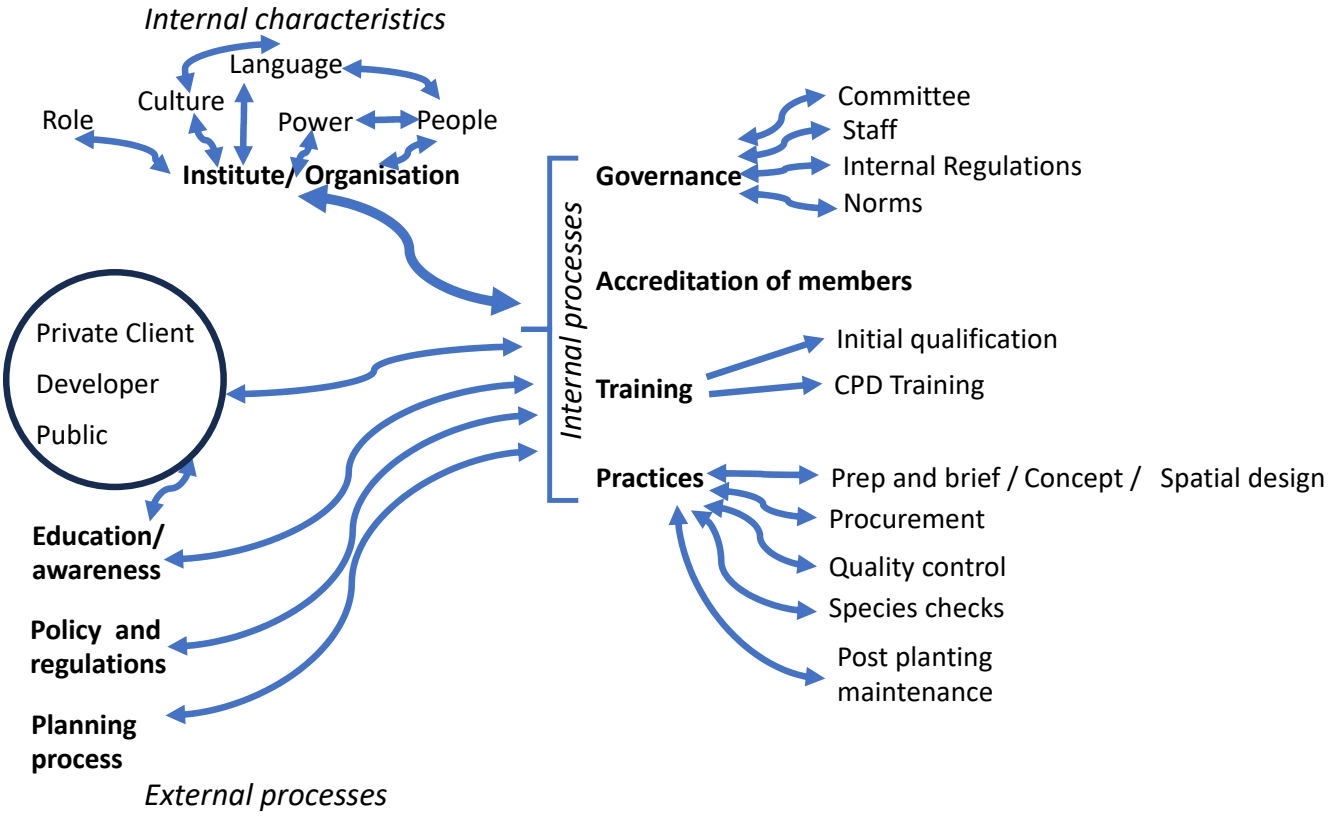

Figure 1: A generic system framework was developed for an organisation to explore leverage points to better promote plant health.

***Table 1:** Possible leverage points for garden design and landscape architecture / construction sectors that could lead to real change in positive plant health practices.*

Area of change	**Aspect of change**	**Garden designers: suggested leverage point**	**Landscape architects/ construction: suggested leverage point**
Organisational characteristics	Language	Align with organisational language e.g. use the terms 'sustainable practice' and 'ecological planting' to discuss plant health	
Organisational characteristics	Role / Power		Landscape Institute has relatively little responsibility or power in the construction process
External processes	Education / awareness	Key engagement opportunities with private clients and garden designers including Newsletter, Journal and biannual symposium	Education for landscape architects, planners, local authority staff and building contractors
External processes	Policy and regulation	Inclusion of SGD representation in the policy and communications groups	Contracts and client awareness could be strengthened to support landscape architects in making plant healthy decisions
External processes	Planning process	Importance of Local Authority planning personnel and processes	

Area of change	Aspect of change	Garden designers: suggested leverage point	Landscape architects/ construction: suggested leverage point
Internal processes	Organisational governance		Support staff and committee to strengthen focus on plant health
Internal processes	Accreditation and CPD	Accreditation and Continued Professional Development could include more plant health focus	Add plant health practices into training for landscape architects and contractors e
Internal processes	Practices	Contracts and client awareness could be strengthened to support garden designers in making positive plant biosecurity	Ensure the concept and spatial design retain plant choices for plant health and follow through with species checks Add plant health practices into checklists e.g. Fitter Flora, Landscape Institute, Considerate Constructor Scheme, Chartered Institute of Builders, BREEAM

1.5 Recommendations

- Use a generic system framework to work in partnership through a participatory, co-design approach with relevant sector organisations and institutions (not only targeting individuals) to identify leverage points to support plant healthy knowledge, behaviours and policy.
- Support development of and offer a combination of generic, targeted and organisational learning courses and resources, clearly signposted for organisations and members for awareness, education and accreditation.
- Certification and Continued Professional Development should be compulsory for all professionals involved in plant selection, planting and maintenance.
- Ensure industry standards and formal contracts, manuals or checklists refer to plant health standards at design, implementation and maintenance stages.
- Invite organisation representatives to sit on policy committees as appropriate.
- Educate the public, clients and contractors regarding plant health standards.
- Seek transformation of the whole plant health system as well as pushing specific leverage points for certain sectors.

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