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Joint Action Plant Health

The Swedish University of Agricultural Sciences (SLU) and the Swedish Board of Agriculture (Jordbruksverket) each year submit a budget basis for the next three-year period. The respective authority's documentation for the years 2024–2026 will contain a proposal for an initiative in cooperation and knowledge building in the field of plant health.

The background to the proposal is that a well-functioning production of plants is the basis of the food chain. For us to be able to produce high-quality food and manage the food supply in a new security policy situation and in a changed climate, good plant health is needed. Today, the conditions are not satisfied to fully address these challenges. There is a great need for knowledge that can support industry and society in achieving a sustainable production.

SLU and the Swedish Board of Agriculture therefore propose an initiative in this area. It would complement other initiatives for sustainable societal development such as the Food Strategy and the development of civil preparedness. Such an initiative would also complement efforts to improve the long-term flexibility and adaptability of the labour market as it covers one of the areas where the need for knowledge and skills is expected to be high in the future.

SLU and the Swedish Board of Agriculture hereby submit a description of the proposal. We would also greatly appreciate to have the opportunity to present the proposal orally.

Swedish Board of Agriculture	Swedish University of Agricultural Sciences
Christina Nordin	Maria Knutson Wedel
Director General	Rector

As per separate decisions

Summary

Background and needs

Plants are the basis of the food chain, but today we lose up to 40% of production to plant pests and weeds before harvest. For us to produce high-quality food and meet food security needs, in a new security environment and a changing climate, good plant health is needed. Today, the conditions are not met to fully address these challenges. To limit and prevent crop losses caused by pests, weeds and climate change, our cropping systems need to be adapted and made more resilient. There is thus a great need for knowledge to support industry and society in achieving a sustainable production.

Knowledge needs to be strengthened, access to competence needs to increase and cooperation between relevant actors needs to be developed for us to be successful in this work. Existing resources also need to be better used and we need to close the gap between research and practice.

Proposal

SLU and the Swedish Board of Agriculture are the authorities with the main responsibility for plant health in Swedish food production. The two agencies therefore propose an initiative on the theme based on a mandate from the government. The initiative would complement other initiatives for sustainable societal development such as the Food Strategy, the development of civil preparedness, the Farm to Fork strategy as part of the EU Green New Deal, the implementation of the Common Agricultural Policy and national and European legislation against pests and the use of plant protection products.

As the need for knowledge and skills in agricultural and horticultural production is high, the initiative can also help people who want to change their career with the new transition study support to find available educations, professions, and career paths.

The initiative will deliver needs-based knowledge, skills and infrastructure to ensure plant health in Swedish agricultural and horticultural production. Through a continuous and coordinated work on plant health can:

- production losses due to pests, weeds and unfavorable climatic conditions be further limited,
- the achievement of defined societal objectives for all stakeholders involved in the work be facilitated,
- food security and the ability to handle food supply in a new security situation be improved,
- the costs to producers of meeting societal objectives be limited,
- conditions for development and innovation be created, and
- a stable, increased, and sustainable (all three dimensions of sustainability) crop production in agriculture and horticulture be secured.

In contrast to the current fragmented approach, the proposed investment will focus on on a systems perspective and with a clear chain between practice, advice, training and research. It means that existing activities at SLU and the Swedish Board of Agriculture will be further developed to cover the needs for knowledge and competence. At the same time, close collaboration is being built with authorities, the agricultural and horticultural industry,

advisory organizations, and other businesses. International exchange and knowledge acquisition will be a very important part of the work.

The initiative consists of seven functions:

- *Communication*, which drives interaction with sector stakeholders and collects questions and challenges as well as disseminates the results.
- *Knowledge support* that, in collaboration, handles priority issues in the acute, medium and long term.
- *Capacity building*, which builds expertise in the field through a graduate school and training of experts.
- *Monitoring* that provides support for existing activities with inventory of pests and effects on plants and the environment through, e.g., supplementary inventories and development of methods and models.
- *Risk analysis and forecasting* that assess the impact of pests and climate on plant health.
- *Strategies* that, with a clear systems perspective, develop strategies for plant protection and climate adaptation to secure plant health and contribute to the development of sustainable cultivation systems and food chains.
- *Operational analysis* carries out analyses of ongoing work and the policy instruments used to reach the objectives set by society that link to plant health. Based on the analyses, changes to the work are proposed and needs for further development are identified.

A steering group is responsible for the overall management of the activities and develops the budget and operational plan for the initiative. The steering group consists of external members and members from SLU and the Swedish Board of Agriculture.

The costs of the initiative are preliminarily estimated at 50 million SEK per year, of which 38 million SEK per year constitutes a need for new funding. The funds provided by the Swedish Board of Agriculture and SLU (12 million SEK) consist of financial and human resources from several parts of current activities that are reprioritised for the implementation of the initiative. In addition to this, several existing activities in each organisation will participate and contribute to implementation of the initiative.

Anchoring of the proposal for an investment in the theme of plant health has taken place both internally in the respective organization and externally in several rounds. Comments received have been evaluated on an ongoing basis and the design of the proposal has subsequently been adjusted in relevant parts.

Introduction

Background

Crop production is the basis of the food chain. It faces several challenges because of more pests, the need for new crop protection methods, environmental problems, invasive species and loss of biodiversity. Climate change, globalisation, situations where global agreements cease to work and rapid geopolitical changes entail challenges but can also bring new opportunities.

Plant health is central in this context. It is determined by the combination of conditions in nature and society. These change continuously and therefore new challenges and opportunities arise dynamically over time. Despite countermeasures, we lose up to 40 percent of our crops to plant pests such as weeds, insects, fungi and viruses. Climate change is also stressing our crops. Reduced plant health has already caused large crop losses which are expected to increase (IPCC 2022). At the same time, climate change can open the possibility for increased production and new crops in Sweden.

Several ambitious initiatives are underway globally, in the EU and nationally, to meet the challenges linked to crop production, plant health and climate. The Food Strategy, the development of civil preparedness, Agenda 2030, the Farm to Fork strategy as part of the EU Green New Deal, EU's Common Agricultural Policy, the Regulation on protective measures against plant pests (Regulation (EU) 2016/2031, PHR), the EU Directive on the marketing of seeds and other propagating material, and legislation on the sustainable use of plant protection products and Sweden's environmental objectives and strategic plan for the implementation of the Common Agricultural Policy are some examples where plant health are of great importance. To achieve these ambitious goals, we need to change our farming systems.

Definition

Here, plant health is used as an umbrella term. It includes both existing and new pests, diseases and weeds as well as the role of beneficial biodiversity (e.g. in the microbiome, pollinators, natural enemies of pests) associated with the crop play in plant health and production. Plant health also includes the change in conditions that a changed climate brings. To take advantage of the opportunities to develop economic, ecological and social sustainability, measures are needed that prevent or mitigate the effects of both existing and new pests, diseases and weeds. In the case of quarantine pests, it also means measures to eradicate and prevent pests from spreading further or even entering the country.

Boundaries and dependencies

Plants live naturally or are cultivated in many different environments. Joint Action Plant Health focuses on Swedish agricultural and horticultural production.

However, plant pests and their natural enemies can be linked to many different habitats, and basic knowledge of plant health and pests is closely related. Plant health interventions need a broad approach that encompasses several habitats and organisms. Coordination and collaboration with interventions in other habitats is considered in the work of the Joint Action Plant Health.

The activity is based on an established collaboration with stakeholders in the sector.

Therefore, it will be planned and implemented in close collaboration with stakeholders in agriculture and horticulture and related industry and authorities.

Anchoring

Anchoring of Joint Action Plant Health has taken place both internally in each organisation and externally. Among others, the members of the Plant Protection Council, the National Veterinary Institute, county councils, RISE, advisory organisations, experimental organisations, trade organizations and commerce have had the opportunity to give their views. External stakeholders have had the opportunity to provide comments at a workshop organised by SLU and the Swedish Board of Agriculture on 18 May 2022 and in connection with a presentation at the Swedish National Plant Protection Conference on 9-10 November 2022. They have also had the opportunity during the autumn of 2022 to provide written comments on the description of the initiative that was developed during the work and published openly and widely disseminated.

The initiative has been discussed internally in each organisation and opportunities have been given to give written and oral comments during the time the work has been ongoing.

Comments received have been evaluated on an ongoing basis. Where necessary, the proposal has been adjusted. Among other things, parts of the proposal relating to collaboration with and participation of other external actors have been adjusted and clarified.

Needs and benefits

SLU and the Swedish Board of Agriculture are the authorities with the main responsibility for plant health in Swedish food production. In this role we need to work to meet the needs of food chain and the demands made by society. There is a large consensus within the sector that the need for action is already great today and is expected to increase. The work requires a high level of cooperation, a well-developed knowledge support and a stable competence supply and strategy development that takes place across the borders between authorities, education, advisory services, business, stakeholder organisations and society at large.

Currently, there is no integrated work on plant health linked to agriculture and production where universities, authorities, advisory services and industry work in a coordinated manner with a systems perspective. The initiatives that exist today all focus on a particular method, problem or production system. Important areas and sectors are not covered. The distance between research and practice is perceived by many actors as large. Therefore, the coordination of work in the field of plant health needs to be developed in order to:

- make better use of existing resources and fill the knowledge gaps that currently exist and personnel with expertise,
- facilitate the search for system-level solutions to existing and future plant health issues,
- increase capacity to address complex issues in the short and longer term and deliver results that support industry and society in achieving sustainable production, and
- reduce the perceived gap between research and practice.

Skills shortages and labour market needs for people with qualifications in plant production is high. The government's investment in the transition study support means that there is a possibility for more people to change career mid-life by training. An investment in the field

of plant health can help to create more interest in educations on production and for a sector with good job opportunities.

The objective of the food strategy is a competitive food chain where the total food production increases, while achieving relevant national environmental objectives and creating a sustainable growth and employment throughout the country. Swedish food production has good circumstances for contributing to increased employment and growth while at the same time contributing to strengthening sustainable development both in Sweden and in the rest of the world.

The value of Swedish crop production in 2020 was 30.3 billion SEK including professional horticulture. The corresponding figures for Swedish food companies were around 200 billion. In 2020, more than 166 300 people were employed in the agricultural and horticulture and about 55 000 people in Swedish food companies. Already less pest and weed infestations can have a major impact on production in terms of yields, quality and profitability. Good plant health is a basic prerequisite for Swedish crop production to be maintained and developed in a sustainable manner.

Through continuous and coordinated work on plant health can:

- production losses due to pests, weeds and unfavorable climatic conditions be further limited,
- the achievement of defined societal objectives for all stakeholders involved in the work be facilitated,
- improve food security and the ability to cope with food insecurity in a new security situation,
- limit the costs to producers of meeting societal objectives,
- create conditions for development and innovation,
- a stable, increased and sustainable (all three dimensions of sustainability) crop production in agriculture and horticulture be secured.

Joint Action Plant Health

Joint Action Plant Health has been developed cooperatively by the two agencies. The ambition is to contribute to addressing the need for transition and adaptation in Swedish agriculture and horticultural production.

Joint Action Plant Health will improve the use of existing infrastructure, resources and data by combining expertise and collaboration within the agriculture and horticulture sectors. This will be done by linking existing work at SLU in a cross-sectoral effort, the Swedish Board of Agriculture and actors outside both agencies with a link to plant health. To this, joint functions for the initiative are being developed, for example for information dissemination, communication, advice, method development and basic knowledge such as risk assessment, climate modelling, biology and ecology.

The Plant Health Cluster is well aligned with:

- SLU's strategic goals of sustainable development, One SLU and a digitalised society.

- The Swedish Board of Agriculture's strategic goal of a competitive, profitable and growing food production in Sweden where environmental goals are achieved, production becomes more resource efficient and has good plant protection.

Purpose and objectives

Joint Action Plant Health has the ambition to contribute to the work of transforming and strengthening Swedish production so that it can be competitive and robust, achieve relevant national environmental objectives, grow sustainably, and create more jobs throughout the country.

Joint Action Plant Health shall, through strengthened plant health, prevent or reduce crop losses caused by pests and deal with the consequences of climate change that affect plant health.

The initiative delivers needs-based knowledge, expertise, decision support and preparedness that contribute to safeguarding and enhancing plant health in sustainable and productive agriculture and horticulture. The initiative takes a systems perspective based on a functional chain from basic research to practice in collaboration and coordination of competences and resources. with universities, authorities, advisory services, industry and society in general.

Joint Action Plant Health - structure, governance and functions

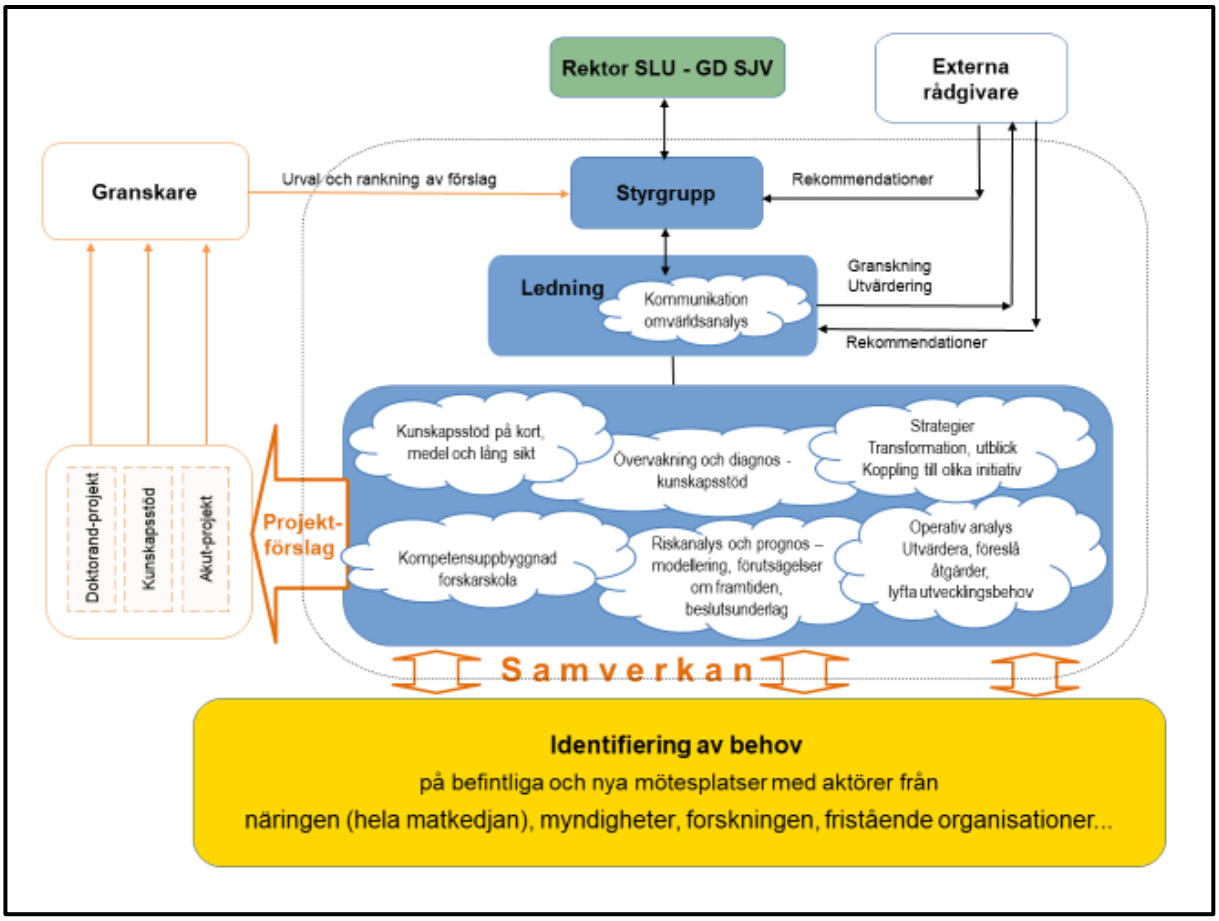

Figure 1. Proposed structure of Joint Action Plant Health.

It is proposed that the Joint Action Plant Health should consist of the following elements (Figure 1):

- Steering Group
- Operational management

and seven functions:

- Communication
- Knowledge support in the short, medium and long term
- Capacity building
- Monitoring
- Risk analysis and forecasting
- Strategies
- Operational analysis

Two groups are associated with the operation:

- External advisors
- Reviewers of project proposals

Governance of Joint Action Plant Health

The initiative will be jointly implemented by SLU and the Swedish Board of Agriculture. The conditions and responsibilities for the collaboration will be regulated in an agreement between the Swedish Board of Agriculture and SLU, which will include management, organisation responsibilities, decision-making mandate, objectives and the basis for priorities and staffing will be set out. Responsibility for different parts of the budget will be assigned to either SLU or the Swedish Board of Agriculture, which will be given the main responsibility for implementing the respective part of the activity. Whichever of the two authorities has primary responsibility for a part of the activity will have mandate to take decisions relating to that part of the activity. Which of the two authorities has the mandate to take decisions relating to the different parts of the and will be set out in the agreement mentioned above.

The Director and the Deputy Director will be the operational management. A steering group oversees the overall governance and prepares the budget and operational plan for each calendar year. The steering group consists of external members as well as members from SLU and Swedish Board of Agriculture. Principles for how the allocation of seats in the steering group should be distributed need to be drawn up together with a process for appointing the members. The Director is adjunct to the Steering Group meetings. The Steering Group will develop criteria for the prioritisation and selection of missions and projects to be funded through the initiative.

Operational activities are carried out as part of the line activities and are planned, controlled and followed up using the routines and processes that normally apply to activities within the respective organization.

Management and communication

A management team is responsible for management, monitoring and communication. Staffing is done through part-time assignments. The management team consists of the director and 1-2 deputy directors. Administrative support and communication support are linked to the management team. The persons appointed from the organizations are assigned different areas of responsibility in the organization and must at the same time be responsible for a broad representation of the initiative. In addition to overall responsibility, the Director is responsible for the management of the communication component.

A group of reviewers will be set up to select and propose resource allocation to projects, etc. The group consists of external members as well as members from SLU and the Swedish Board of Agriculture.

Monitoring and evaluation

A group of external international experts with researchers and stakeholders follows the operation continuously for follow-up, advice and evaluation. This group also forms a communication channel and networking outwards as a basis, for example, for EU collaborations. External experts make an evaluation after 3 years.

Needs assessment and project proposals

The work of the initiative is largely concerned with identifying needs, coordinating and disseminating the required knowledge in collaboration.

Identification of needs is continuous through existing and new venues. All participants in all functions will actively contribute to communication and continuous interaction with stakeholders outside the initiative. Needs assessment is carried out in close communication with stakeholders in the agricultural and horticultural industry and researchers at several existing and, where necessary, new venues. The establishment of a reference group for the initiative or implementation councils can be examples of new meeting places that give relevant actors opportunities to influence the content of the activity. Existing meeting places include the Swedish National Plant Protection Conference, Regional Agricultural Conferences, the subject committees for plant protection, weeds and variety issues. There are also a large number of other meetings organized by the industry, advisory organizations and others that may be relevant in this context. Project proposals are developed from these dialogues.

Projects are called for by the initiative in different categories with different review criteria developed with relevant stakeholders. Three categories could be PhD Projects, Knowledge Support and Emergency projects.

Two principles apply to the selection of projects:

1. Projects according to the first principle are added at the suggestion of the management team against the background of current needs. These needs are caused, for example, by the current damage situation, temporary needs for expert support, data collection, or the need to develop tools for the analysis function. The member of the Steering Group with the decision-making mandate decides on projects following proposals from the review team.
2. Projects under the second principle are freely applied for by researchers at SLU or researchers at other universities and organisations. Applications are submitted directly

to the Steering Committee. When making a decision, consideration must be given to which collaborations, within and outside SLU, are proposed.

All projects should cross disciplinary, departmental and faculty boundaries. Main applicants must be a permanently employed researcher at SLU with a PhD or equivalent role, and competence at another university or organisation. Research expertise from outside SLU should also contribute to and participate in the projects. This also applies to co-applicants who are not university employees.

The review team consists of members from SLU and appointed persons from authorities and industry. The group reviews and ranks project proposals submitted to the initiative. The review group proposes a ranking to the steering group.

Collaboration within the European research network Euphresco may provide opportunities to implement projects addressing needs for applied research linked to already regulated, but also new threatening plant pests, including measures against them. Some project ideas may therefore be relevant for inclusion in the work of Euphresco as described under operational analysis below. In this way, the leverage of resources can increase.

Features of Joint Action Plant Health

1. Communication function

Communication is of critical importance to the success of the work. A communication plan and clear structure for communication and collaboration is therefore needed. The initiative will act as a portal and focal point for the dissemination of results and of plant health issues and challenges.

The initiative must be a clear contact area and active information channel for stakeholders, industry, researchers, authorities, legislators and citizens, nationally and internationally. The initiative conveys knowledge about plant protection methods and measures to strengthen plant health and prevent and avoid crop losses through appropriate channels and using existing actors for imparting knowledge.

2. Knowledge support function

The knowledge support function will address current and important issues in the short, medium and long term. Preparedness shall be in place to provide significant emergency knowledge support at short notice in relation to sudden plant health problems linked to, for example, pest outbreaks, introduction of new pests and extreme weather. Specific tasks may include assisting in gathering expertise, establishing synergies, coordinating the development, and compiling knowledge, conducting inventories and compiling knowledge to solve emergency problems. The work may involve quarantine pests as well as other pests. Responsibility for tasks carried out at SLU must be kept separate from responsibility for tasks carried out by the Swedish Board of Agriculture. The management team is responsible for ensuring that such preparedness exists.

The knowledge support will also increase the ability to deal with problems and to increase the knowledge to, in the medium to longer term, collaboratively address emerging plant health problems in agriculture and horticulture. This may be achieved by carrying out research or

development projects. The generation of new knowledge makes it possible to safeguard plant health and minimise losses linked to a changing climate and the need for new plant protection methods (e.g., linked to major-minor uses). With increased knowledge and skills, the function, in collaboration with authorities and ministries, can contribute to the legislative process, certification and societal objectives related to plant health.

Extensive new knowledge will be generated by PhD students within the graduate school (see below). However, this knowledge development must follow the format of the PhD programme. More types of projects for e.g., knowledge development, development of modelling tools, techniques and methods, for example linked to the expected use of pesticides in horticulture and agriculture, may be more appropriate to be carried out in a different format. Similarly, there is much to be gained from acquiring knowledge about pests entering the country by knowledge exchange with international experts who have previous experience with these pests. A relatively extensive research and development activity alongside the research schools will therefore be needed, among other things to satisfy needs within the analysis function. The length of these projects can vary and range from shorter development projects to longer projects of a fundamental nature.

Through its structure, the initiative is expected to address many of the needs for new knowledge that were raised during the design of Joint Action Plant Health. The initiative is also expected to contribute to strengthening the bond between applied research and the connection to practical application.

3. Competence building function

The need for knowledge and competence about plant production at various levels in society is assessed as great. Today, not enough people are trained to cover the needs of employers and society. Joint Action Plant Health can make more people (young people, professionals or career changers) discover the educational offerings in plant production that lead to professions and career paths and the lifelong learning that the industry needs and demands. The government's investment in the new transition study support is therefore an important component in helping to reduce competence shortage in the industry. The activities within Joint Action Plant Health must therefore lay the foundation for knowledge development and competence provision within universities, authorities and companies. It primarily includes research training and continuing education in close cooperation with the agricultural and horticultural industry and authorities based on AKIS (Agrarian knowledge and innovation system) in Sweden as a framework. Sector-wide basic knowledge is built up, for example biology, ecology, climate research, production systems, linked to plant health and climate adaptation of crops.

The networks established in joint research studies are expected to facilitate future collaboration, for example in the case of pest outbreaks and extreme climate. Places at the graduate school are distributed by decision of the steering group member who has a decision-making mandate in the steering group following proposals from the review panel.

The capacity building function will provide a hub where researchers meet practitioners. In this intersection, conditions are created for developing commissioned education for companies and organisations in the sector. The question of whether there is a need for a a formal mandate from the government to carry out and charge for such training needs to be investigated further. Other initiatives in addition to in-service training include workshops and

courses organised as assignments from other functions and based on project proposals from the teaching staff.

PhD projects may underpin other parts of the initiative, for example forecasting, monitoring and strategy development.

International collaboration, exchange and knowledge gathering is a natural and central part of the operations. The link to the project activities of Joint Action Plant Health reinforces work on applied and participatory research.

4. Monitoring function

The monitoring of plant health and pest populations at SLU shall not overlap the Swedish Board of Agriculture's responsibility for inventories carried out by, for example, the Plant Protection Centres (Växtskyddscentralerna) and inventories of quarantine pests by the Swedish Board of Agriculture. Instead, the activities complement existing surveillance data collection by developing, improving and quality assuring methods and models for plant health and population estimates. This may include development of methods for the analysis of fungal spores and other microorganisms using DNA analysis, so that both quarantine pests and other pests can be managed simultaneously. It may also involve providing expert support for diagnostics in connection with import and export controls, etc. Furthermore, tasks related to monitoring the impact of pesticides on water quality and on biodiversity including beneficial organisms may be relevant.

5. Risk analysis and forecasting function

This component is responsible for continuous forward-looking risk analysis including risk assessment, forecasting and scenario modelling and impact assessment as a basis for ongoing knowledge and decision support related to plant health, climate and pests. Current areas are:

- Analysis of impacts on plant health caused by pests (weeds, insects, fungi, nematodes, bacteria, viruses, etc.)
- Risk and impact assessment of quarantine pests and plant pests that under evaluation met the criteria to be regulated as quarantine pests.
- Impacts on plant health caused by climate change.

Part of the activities at SLU Risk Assessment of Plant Pests is included of this function.

Other functions, such as knowledge support, should be driven by needs identified by the function. Researchers and PhD students who are not normally involved in the activities can be associated with the work when specific needs arise (e.g., pest outbreaks, climate disasters), and participate in thematic advisory groups. Data on, for example, damage levels, population sizes and indicators of plant health are obtained from the monitoring function. Modelling tools are developed to support the activities of the analysis function.

6. Policy function

This function develops strategies for plant protection and climate adaptation to ensure plant health with a clear systems perspective. Knowledge and expertise are brought together to develop concrete proposals and strategies for the transformation of cropping systems and food chains to ensure plant health. Communication through inter- and transdisciplinary fora with national and international partners, exchanges, webinars, workshops and development of

strategy papers. Swedish plant health is put into a Nordic, European and global perspective. We also link this to other initiatives that affect Swedish plant cultivation and thus create new conditions for plant health, e.g., linked to Soil Health, One Health, carbon sequestration, nutrient utilization and adaptation of cropping systems, socioeconomics, and changes in the value chain from farm to fork and building civil preparedness.

7. Operational analysis function

This function carries out ongoing analysis of the agricultural and horticultural sectors to describe developments and evaluate the results of the various actions undertaken to achieve the objectives set by society related to plant health. The work will focus on analyses of objectives linked to the Food Strategy, the development of civil preparedness, the national environmental objectives and European and national legislation on protective measures against pests, marketing of seeds and propagating material, and sustainable use of pesticides. Both mandatory and voluntary measures are included. The analysis work includes both describing the current situation and, as far as possible, describing changes in the short and medium term. The work will include:

- Monitoring and evaluating progress against objectives.
- Identifying future changes in the short and medium term that will need to be addressed.
- Finding strengths and weaknesses in existing processes.
- Suggesting changes or highlighting the need for development work, for example in the Euphresco research network.
- Describe the consequences of different changes or policy options.
- External environment monitoring and international exchanges linking to work and follow up developments in other countries.

This includes work to:

- anticipating the possibility of dealing with plant health problems and weeds in different crops,
- describing and analysing developments in the use of plant protection products and their related risks to health and the environment and highlight the need for changes, measures and instruments,
- improving existing or developing new ways of following development with indicators, controling development with control instruments or improving compliance with rules with supervision, and
- participating in the Euphresco network to take advantage of opportunities to propose projects, participating in the prioritisation of proposed projects, and were deemed relevant participating in the implementation of Euphresco research projects.

Collaboration with other thematic groups will be important to achieve research and development work needed based on the analyses carried out.

Indicative budget

The total cost of Joint Action Plant Health has been preliminarily estimated at 50 million SEK per year. Of this, SLU and the Swedish Board of Agriculture will contribute 12 million SEK per year via priorities within existing activities. They consist of financial and personnel

resources from several parts of the current organisations that are reprioritized and set aside in the implementation of the investment.

Remaining needs to fulfill the goals that have been set to 38 million SEK per year. A large part of the costs consists of longer or shorter assignments and projects.

About 90 percent of the total amount is channeled via SLU, which mainly finances activities that develop new knowledge.

The remaining approximate 10 percent refers to operations carried out with the Swedish Board of Agriculture as the principal organisation. The costs are preliminarily distributed according to table 1 on the various parts of the initiative.

In addition to the budget summarized above, resources in existing operations both at SLU and the Swedish Board of Agriculture will be coordinated with the work Joint Action Plant Health. Through prioritization in their own operations, these operations can strengthen the work in the initiative while at the same time benefitting from the results of the work. For SLU, the following activities are initially covered:

- Collaboration specialists, lecturers, subject professors who supervise and participate in projects and other activities funded by government grants.
- SLU Centre for Biological Control
- SLU Risk Assessment of Plant Pests
- SLU Centre for Pesticides in the Environment
- SLU Grogrund - Centre for Breeding of Food Crops
- SLU Centre for Organic Food and Farming, Epok
- SLU Future Food
- AgriFood

For the Swedish Board of Agriculture, the following activities are initially covered:

- The Plant Protection Centres (Växtskyddscentralerna)
- The Plant Protection Council (Växtskyddsrådet) including work on access to plant protection for major use
- Work on regulated and non-regulated quarantine pests, seeds and plant propagating material and environmental legislation

Table 1. *Preliminary budget Joint Action Plant Health, SEK million per year*

Function	Organisation	Budget	Prioritization within existing operations and budget	Remaining needs that we request
Management, follow-up, and resource allocation	SLU	1,5	0,5	1
	JV	0,5	0,5	0
Knowledge support	SLU	15	3	12
	JV	0	0	0
Competence development including graduate school	SLU	13	2	11
	JV	0	0	0
Monitoring	SLU	3	1	2*
	JV	0	0	0
Analysis and forecast	SLU	5	1	4
	JV	0	0	0
Strategies	SLU	4	1	3
	JV	0	0	0
Operational analysis	SLU	0	0	0
	JV	4	1,5	2,5
Communication	SLU	3,5	1	2,5
	JV	0,5	0,5	0
Total	SLU	45	9,5	35,5
	JV	5	2,5	2,5
Total	All	50	12	38

* This may increase if a diagnostic laboratory for plant pests is funded