



EC Sixth Framework ERA-NET Project

# EUPHRESKO

(**EU**ropean **PH**ytosanitary **RE**search **CO**ordination)

Deliverable 2.2

Report on the Mapping and Analysis of National Phytosanitary  
(Quarantine/Regulated Plant Health) Research Programmes

Date of report: November 2007

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Austrian Agency for Health & Food Safety	AGES	Austria
Institute for Agricultural and Fisheries Research	ILVO	Belgium
The Federal Public Service for Public Health, Food Chain Safety & Environment	FPS	Belgium
Ministry of Agriculture & Forestry, National Service for Plant Protection	NSPP	Bulgaria
Ministry of Agriculture, Natural Resources & Environment, Agricultural Research Institute	ARI	Cyprus
Ministry of Agriculture, National Agency for Agricultural Research	NAAR	Czech Republic
Ministry of Food, Agriculture & Fisheries, Directorate of Food, Fisheries & Agri-Business	DFFAB	Denmark
Ministry of Agriculture & Forestry	MMM	Finland
Ministry of Agriculture, Food, Fisheries & Rurality, General Food Directorate	DGAL	France
National Institute of Agronomic Research	INRA	France
Federal Ministry of Food, Agriculture and Consumer Protection	BMELV	Germany
Federal Biological Research Centre for Agriculture & Forestry	BBA	Germany
Department of Agriculture & Food	DAF	Ireland
Ministry of Agricultural & Forestry Policy	MPAF	Italy
Agricultural Research Council	CRA	Italy
Ministry of Agriculture, Nature & Food Quality, Department for Knowledge	LNv	Netherlands
Ministry of Agriculture, Nature & Food Quality, Plant Protection Service	PD	Netherlands
Ministry of Agriculture, Forestry and Food	MAFF	Slovenia
Ministry of Education and Science, National Institute of Agricultural Research	INIA	Spain
Federal Office for Agriculture, Division of Research & Extension	FOAG	Switzerland
Ministry of Agriculture & Rural Affairs, General Directorate of Agriculture Research	GDAR	Turkey
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## **SUMMARY**

EUPHRESCO is an ERA-Net (European research area network) funded by the EU 6th Framework Programme (FP6) over 51 months (2006-2010). It aims to increase co-operation and co-ordination of national phytosanitary research programmes and funds at the EU level through networking of research activities and mutual opening of national programmes. It has three main over-arching strategic goals:

- To develop phytosanitary (statutory plant health) research policy at the EU-wide level.
- To optimise the research provision that underpins EU quarantine plant health policy development and policy implementation, in an era of increasing biosecurity threats from alien plant pests, diseases and invasive species.
- To increase the capacity of European phytosanitary science and research, in order to prevent the disappearance of EU expertise in this field and maintain Europe's competitiveness in the global market.

To achieve these objectives, the first step was to map, analyse and share information on national phytosanitary research programmes. This report describes the output of the second workpackage (WP2) of EUPHRESCO, on this major information-gathering exercise. The information to be gathered was defined (funds, programme information, management procedures, research landscape, needs for future collaboration) and an internal database of national research projects was constructed.

Seventeen countries and 24 participants (all funding and/or managing phytosanitary research programmes) are involved in EUPHRESCO: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, The Netherlands, Slovenia, Spain, Switzerland and Turkey, UK. All the participants except one entered a total of 35 different programmes and 260 phytosanitary research projects. The current annual budget for nationally-funded phytosanitary research in 2007 was about € 15,720,000.; EU-funded research was estimated at about €1.2 million per year on average, so national funds accounted for over 90% of the total phytosanitary research funding. Strengths, weaknesses, overlaps, gaps and opportunities were analysed. Most national programmes undertook very applied research, which was potentially both a strength and a weakness. Pooling resources might allow more effective commissioning of such applied research as well as providing opportunities for more strategic or fundamental research. Some potential overlaps were identified, highlighting opportunities for reducing duplication of work and optimising resources. In general, there was a good balance between the pest groups studied, though invasive alien species (especially invasive plants) were under studied, as were environmental plant health issues. Clear benefits of better coordination of phytosanitary research at the European level were identified and potential strategies for achieving this were considered. Due to relatively limited national budgets, there was a continuing need for EU funding of phytosanitary research, especially for more larger and more strategic projects. There was a clear need to coordinate nationally-funded research, trans-national research (via EUPHRESCO) and EU-funded research to make best use of resources and to support EU Plant Health policy.

Management of the programmes and projects was described for each participant through various project initiation stages: project proposals/applications; evaluation of proposals; project management; and research contracts. Most of the public governmental and non-governmental research providers were listed for each country. Information for future trans-

national activities was also collated, especially the potential barriers to trans-national activities and initial ideas on future research priorities.

WP2 also tried to gather information from non-partner countries, mainly countries from EPPO and not involved in EUPHRESKO. Four countries provided consistent data: Estonia, Hungary, Poland and Ukraine. Morocco partially completed the questionnaire, but only the section regarding future research priorities. From these non-partner responses, 11 programmes and 72 projects were identified. Future research priorities were also provided for these non-partner countries.

This report and the information gathered was used as a basis for the following workpackages that have the task to develop and implement instruments for joint activities in the area of phytosanitary research. In conclusion, phytosanitary trans-national research activities were almost non-existent in Europe, except through EU-funded phytosanitary projects, at the start of the EUPHRESKO ERA-Net Project. EUPHRESKO therefore has a clear opportunity to: facilitate cooperation through its current and future activities; optimise the use of national resources through sharing information, reducing duplication and pooling funds; build phytosanitary science capability and capacity; and better support European phytosanitary (Plant Health) policy.

## INTRODUCTION

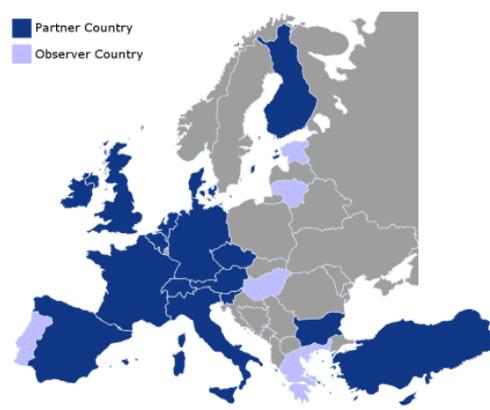
### Background and Aims of EUPHRESKO

Quarantine plant pests, diseases and invasive non-native plants can cause serious economic and environmental damage in Europe. Although the legislation that underpins phytosanitary (quarantine/regulated plant health) policy for these statutory pests and diseases is determined at the EU level, the research that supports policy development and implementation is primarily done at the national level and has not previously been coordinated. This EUPHRESKO Phytosanitary ERA-Net therefore aims to better coordinate national phytosanitary research with itself and with EU-funded phytosanitary research. The Scope of EUPHRESKO is defined as: ‘*Research policy development and implementation in the field of statutory and emerging plant pests, diseases and invasive species (but not: GMO's)*’. EUPHRESKO was initiated and is supported by the EC Council Working Party of Chief Officers of Plant Health Services who recognise the need to optimise national phytosanitary research budgets and prevent the progressive erosion of phytosanitary science expertise; this in an era of increasing threats from quarantine pests, pathogens and invasive species due to globalisation of trade and climate change. EUPHRESKO aims to draw together, for the first time, national research programmes to better serve the needs of EU phytosanitary science and policy. EUPHRESKO aims to achieve its objectives through a step-wise approach, as follows:

- Map, analyse and share information on national phytosanitary research programmes (Workpackage 2).
- Develop mechanisms, instruments and tools for procuring, managing and appraising trans-national phytosanitary research activities (Workpackage 3).
- Test mechanisms, instruments and tools through pilot calls for transnational research (Workpackage 4)
- Develop common research agendas based on shared priorities for developing and implementing a joint programme of activities at the end of the ERA-Net; Establish a long-term, sustainable network of phytosanitary research programme funders and managers (Workpackage 5).

EUPHRESKO has 21 Partners from 17 countries (15 Member States, 1 Associated Candidate Country and 1 Associated State); it represents all of the key national phytosanitary research funders within the EU context. It has input from an Expert Advisory Group which includes the following: The European Commission’s Directorate General for Health and Consumer Protection (DG SANCO); The European and Mediterranean Plant Protection Organisation (EPPO); and The European Food Safety Authority (EFSA) Plant Health Panel secretariat. Six observer countries also participate through their relevant Ministries: Estonia, Greece, Hungary, Lithuania, Malta and Portugal.

**Figure 1:** EUPHRESKO partner and observer countries : partner countries have phytosanitary research programmes whereas observer countries have no formal programme.



## **Aims of Workpackage 2: Mapping and Analysis**

Full details of the work plan for Workpackage 2 are given in Annex 1. The aims and objectives of the Workpackage are:

- To systematically gather information on existing phytosanitary (quarantine/statutory plant health) research programmes, including: projects and budgets; existing funding systems and research management processes/practices; research providers; expertise, facilities and other relevant infrastructures and resources; perceived existing needs and priorities at a regional (sub-national), national or zonal level. Also: mapping any pre-existing regional/national/international linkages between research programmes; and identification of national and EU industry bodies, plus key non-EU bodies, for interaction.
- To evaluate and analyse the gathered information to identify: overlaps, gaps, duplication, strengths/weaknesses, opportunities and common research priorities; and common instruments and ‘principles’ for best practice.

Information on National phytosanitary research programmes was collected on-line from each partner and also, where appropriate, from other funders of phytosanitary research in the partner’s country via a questionnaire. A reduced questionnaire was also made available for funders in non-EUPHRESKO countries in Europe and the EPPO Regions to complete in order to broaden the amount of information gathered.

This Deliverable Report (DL 2.2) synthesises and analyses the gathered data from these national phytosanitary research programmes. Information on national phytosanitary research programme management will inform the development of common instruments/tools in Workpackage 3. These will be tested through pilot calls (Workpackage 4) so that proven instruments will be available at the end of the ERA-Net to implement future trans-national research agendas (Workpackage 5). It should therefore help to develop the future strategic programme in Workpackage 5 and should also potentially inform the choice of pilot projects in Workpackage 4.

This Deliverable Report 2.2. is divided into two main sections:

- (A) phytosanitary research programmes of partner’s countries;
- (B) phytosanitary research information from non-partner countries, including Observer countries, where this could be obtained.

## **A - INFORMATION FROM NATIONAL PROGRAMMES FOR EUPHRESKO PARTNER COUNTRIES**

To enable data collection, a questionnaire was built and was filled out by the partners through EUPHRESKO website. This internet-based questionnaire also allowed the potential construction of a searchable database for use by the Project, accounting for the network's longer-term needs. The final questionnaire had the following main sections (see Annex 2):

(I) Funder/manager details.

(II) Programme information (e.g. rationale; budgetary information & issues; funding mechanisms/issues; projects; links to other programmes, etc). For EUPHRESKO, a programme was understood as a grouping of research projects or activities with a common funding and steering mechanism. A project is a funded unit within or outside a research programme which has defined goals, objectives and timeframe (see definitions in Annex 3)

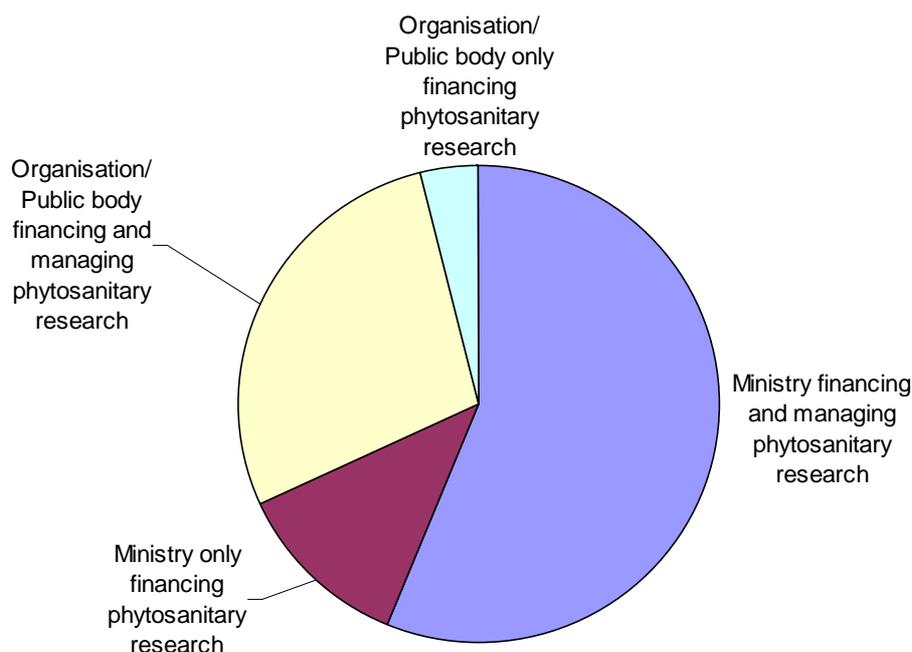
(III) Management procedures (initiation; application; evaluation; contracts; management); 'tools' were also collected (e.g. application/evaluation/report forms; handbooks).

(IV) Research landscape (research providers; key 'non-governmental' stakeholders).

(V) Future (potential barriers for each trans-national funding mechanism; pilot project topics (information not presented in this Deliverable report); future research agenda priorities/topics; reasons for engaging in trans-national activities).

## I. FUNDERS/MANAGERS OF PHYTOSANITARY RESEARCH PROGRAMMES

All the EUPHRESKO partners from the consortium were asked to complete the online questionnaire. They are all funding and/or managing phytosanitary research and consequently are aware of the phytosanitary research that is funded and managed in their countries. 24 questionnaires were submitted; 2 questionnaires were not completed fully, but only in part. Four of the completed questionnaires were filled out by funders who are not EUPHRESKO partners but were invited by their national EUPHRESKO Partner to do so. Figure 2 illustrates the different categories of respondents:



**Figure 2:** Respondents to the on-line questionnaire for EUPHRESKO partner countries.

Partner countries entered data from 35 different programmes: 19 partners presented only 1 phytosanitary research programme for their country whereas 5 partners presented between 2 and 4 research programmes. (Table 1).

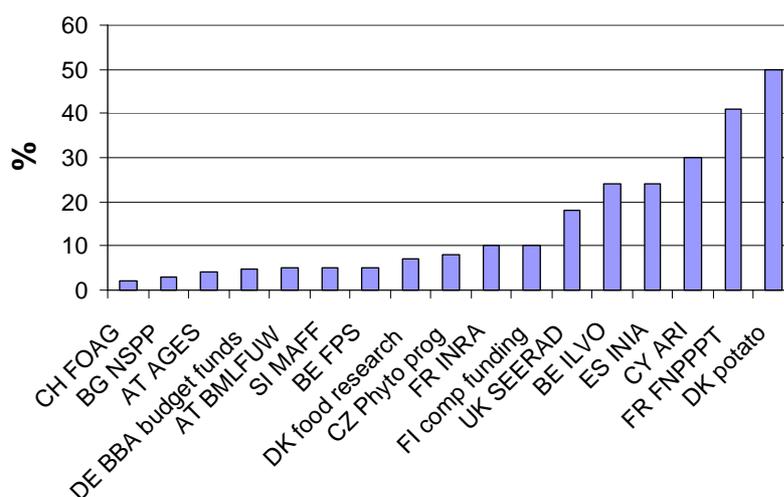
**Table 1: National phytosanitary programmes per country**

<b>Country</b>	<b>Partner acronym</b>	<b>Name of the programme</b>
Austria	BMLFUW	PFEIL10
	AGES	AGES research
Belgium	FPS	Contractual research
	ILVO	Plant quarantine pests
Bulgaria	NSPP	Phytosanitary research
Cyprus	ARI	Production of healthy planting material in grapevines, citrus and stone fruits
Czech Republic	NAAR	Phytosanitary programme part of a larger programme
Denmark	DFFAB	Food technology
		Enhanced control of potato mop top virus in the Nordic and Baltic sea region
		Food research programme
Finland	MMM	Competitive funding
		MTT
		METLA
		PETLA
Finland	Akatemia	Akatemia research funding
France	DGAL	DGAI-SDQPV
	INRA	Environment and plant health department programme
	FNPPPT	FNPPPT
Germany	BBA	Budget funds
		54401
Germany	BMELV	EH
Ireland	DAF	Research stimulus funds
		COFORD programme
		TEAGASC core fund
Italy	MPAF	Phytosanitary programme
Netherlands	MIN	Plant health programme phytosanitary research
Netherlands	PD	PPS research programme
Slovenia	MAFF	Target research programme
Spain	INIA	National sub-programme of resources and agrarian technologies
Switzerland	FOAG	Phytosanitary research
Turkey	GDAR	Plant protection research programme
United Kingdom	DEFRA	Defra Plant Health
		Defra Plant Health CSL HSFP
		Defra Chief Scientific Adviser
United Kingdom	SEERAD	Potato pathology

## II. PROGRAMME INFORMATION: RESEARCH CONTENT

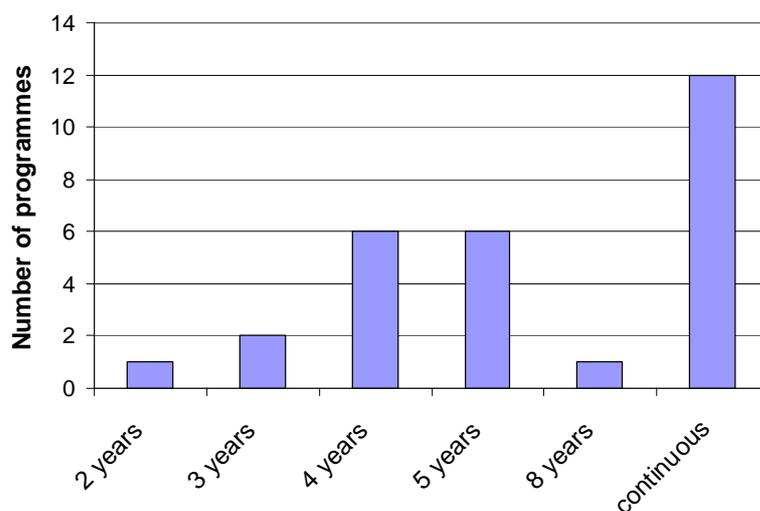
### Programme linkages

Of 33 completed responses, only 6 programmes (18%) were co-funded; 82% were consequently funded by only one funder who is a EUPHRESCO partner. Most of these programmes (82%) were national programmes, whilst 18% were regional (sub-national). Most programmes (75%) were part of larger agronomical/environment research programmes while 25% were discrete phytosanitary research programmes. Two programmes were sector based (e.g. potato grower association). For phytosanitary research conducted as part of a larger more general programme, 15% on average (range 2% to 50%) of the larger programme was allocated to phytosanitary research (Figure 3); however, for 11 out of 17 programmes, phytosanitary research represented less than 10% of the research.



**Figure 3:** The proportion of funds within larger more general agricultural/environmental research programmes that is allocated to phytosanitary research

Most of the phytosanitary programmes are continuous, meaning that they are not funded or defined for a given period of time. In this case and generally speaking, application for projects can start anytime. Of 28 answers, 6 programmes ran over 4 years and 6 others were funded for 5 years (Figure 4).



**Figure 4:** Programme length

Both at national and trans-national levels, there are collaborations between programmes. Of 18 responses, 11 programmes collaborated with other national programmes within their country and 7 collaborated with programmes in other countries. At the intra-national level, co-operation could be either just co-operative or involve joint funding, or both. For instance, AGES and BMLFUW programmes are partly joint funded in Austria, like the INRA and DGAL programmes in France. At the transnational level, collaboration was only collaboratively based, mainly involving information exchange and informal twinning, presumably via bilateral agreements (Cyprus with Italy; Greece and Israel; Switzerland with Germany); there was no pre-existing co-funding between programmes. Very often these collaborations were ‘neighbourhood’ relationships and were consequently zonally based (e.g. between Mediterranean countries).

The national phytosanitary programmes were sometimes linked to other disciplines, mainly :

- Economy and socio-economics: for example where the programme aims at sustaining the economy of a given sector (e.g. potato, forestry, etc). Cost-benefit analysis can also help to assess the impact of pests and diseases. Another example is the informal link between the Plant Health Research Programme from Defra (UK) and the Rural Economy and Land Use Programme which is mainly funded by several UK Research Councils.
- Environmental impact of plant pests and diseases
- Modelling, especially epidemiological modelling
- Statistics

### **Objectives of the national phytosanitary programmes**

Not surprisingly, the research programme objectives are more or less the same for all the partners and can be gathered into four main areas:

- Exclusion of quarantine plant pests<sup>1</sup>. It involves: the development of detection and identification tools to prevent or minimise the risk of introduction of specific quarantine pests; the development of new or novel diagnostic approaches; and the transfer of new research into routine use. Consequently, it also contributes to the knowledge of possible pathways for spreading quarantine pests to prevent their introduction and establishment. The development of methods for integrating information systems for pest collections and diagnostics is also considered part of this type of research.
- Eradication and containment of plant pests. This involves the development of control/management methods for quarantine pests which may contribute to the development of contingency plans; it may include modelling approaches and the development of strategies for monitoring quarantine pests.
- Policy optimisation. This involves research that fills in the gaps in pest risk assessment, e.g. data on pest biology, epidemiology, ecology and socio-economic impact that support the development of policy.
- Trade facilitation. This involves research which helps to ensure or prove that plants and plant materials that are being exported are free from harmful pests relevant to the importing country.

Some programmes are general, dealing with all the ‘agriculture’ areas (e.g. agriculture, horticulture, viticulture) while others are more sector based, e.g. the potato sector (Fr-FNPPT, Denmark: enhanced control of potato mop top virus in the Nordic and Baltic sea region), the forestry sector (Metla in Finland), etc.

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<sup>1</sup> Plant pests include pests, diseases and invasive weeds as defined by the FAO in ISPM No. 5 (Annex 3).

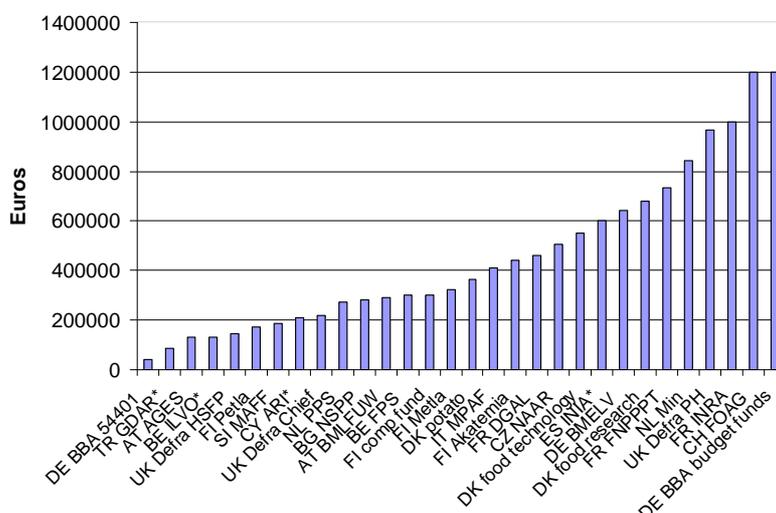
Some programmes have been officially published and detailed information can be found on websites (Table 2) :

**Table 2 : Programme website addresses from which programme objectives and rationales can be obtained**

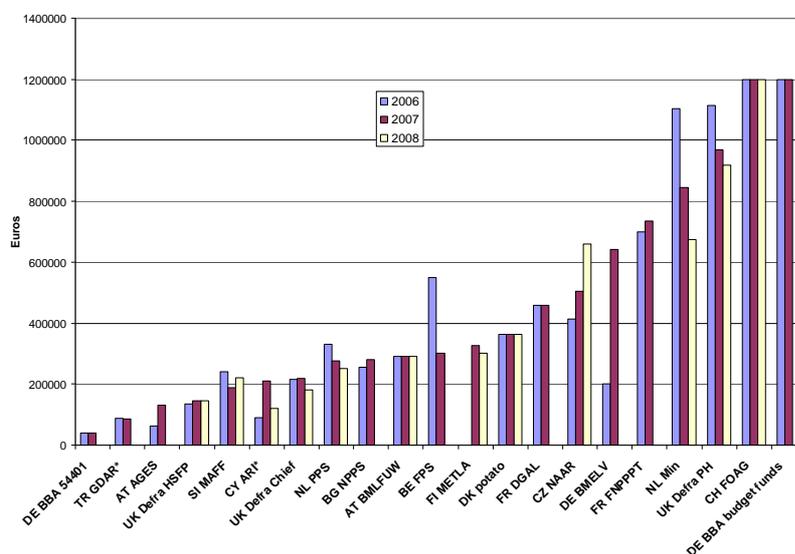
Country /programme name	Web address
Austria / Ages and BMLFUW	www.lebensministerium.at/article/articleview/43399/1/5106
Bulgaria / NSPP	www.ppi-bg.org/index_en.php?lang=_en
Denmark / enhanced control	www.nkj.nu/sivu/en/forskning/forskningsprojekt/
Denmark / food research programme	www.landdistriktsprogram.dk/Default.asp?ID=30037
Denmark / food technology	www.dffe.dk/Default.asp?ID=33171
Finland / Akatemia	www.aka.fi
Finland / Metla	www.metla.fi
Finland / MMM competitive funding	www.mmm.fi/fi/index/tutkimus/hakukuulutukset.html
Finland / MTT	www.mtt.fi
Germany / BBA	www.jki.bund.de
The Netherlands / Min	www.onderzoekinformatie.nl/nl/oi/nod/onderzoek/OND1313006/
Spain / INIA	www.boe.es/g/es/boe/dias/2006/08/25/seccion3.php#00006
Switzerland / FOAG	www.aramis.admin.ch www.blw.admin.ch/agroscope/index.html?lang=en
United Kingdom / Defra Chief Scientific adviser	www.defra.gov.uk/research/project_data/Default.asp
United Kingdom / Defra PH	www.defra.gov.uk/plant/science/roamea.pdf
United Kingdom / SEERAD	www.scotland.gov.uk/Topics/Research/15597/23151

### Programme funds and budgets

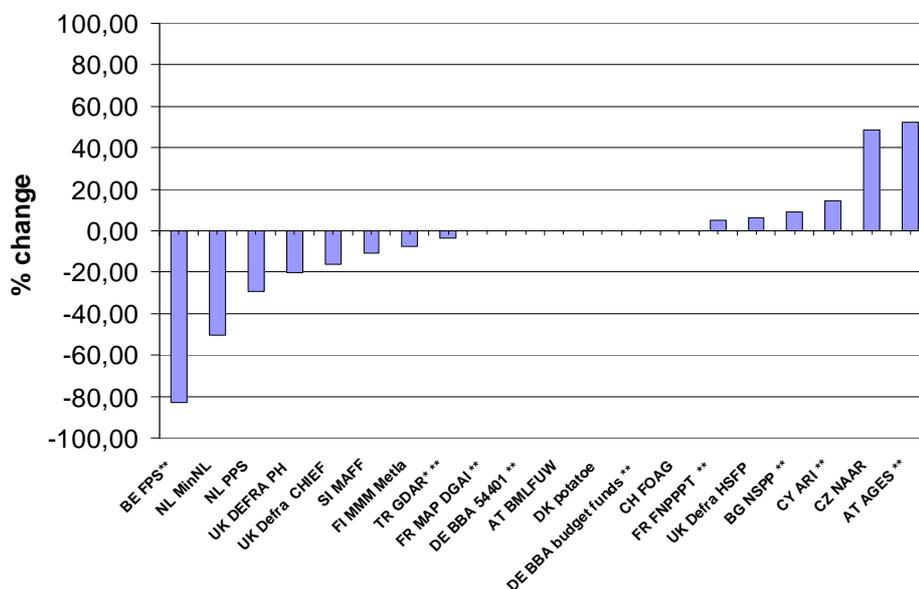
The current total amount of annual funding for national phytosanitary research was about €15,720,480 for the 35 programmes represented from EUPHRESKO Partner countries. This more or less reflects all the national plant health funding in Europe since all the key funders are included. Figure 5 shows the distribution of budgets per programme. The budgets are in full costs, so that everything is included in it, i.e. salaries, taxes, consumables, travel, etc. NB. four programmes (with asterisk) do not have salaries and taxes included, consequently figures for these countries are underestimated compared to other budgets.



The range of budgets per programme was very wide, ranging from €40,000 to €1,200,000 per annum. For most of the programmes, the amount of money allocated to phytosanitary research was more or less similar over the 3-year period from 2006 to 2008 (Figure 6). However a large decrease has been experienced in the Netherlands and in the United Kingdom (20–62% decrease for individual programmes), who are two of the larger national funders. On the other hand, some other countries consistently increased their budget for phytosanitary research, e.g. Austria (AGES) and Czech Republic (Figure 7).



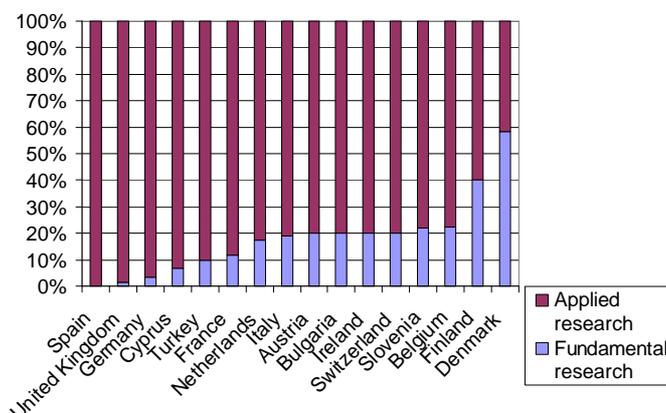
**Figure 6 :** Trends in national phytosanitary research budgets from 2006 to 2008



**Figure 7 :** Changes in National phytosanitary research budgets per programme between 2006-2008 (\*\* : data for either 2006 or 2008 not available, evolution from 2006 to 2007 or 2007 to 2008)

Of 33 responses available, 13 programmes were 100% competitive, 12 programmes were 100% non-competitive and 8 were a mix of competitive and non-competitive research (with competitive research predominating in 3 programmes and non-competitive research predominating in 5 programmes).

Almost all the country’s programmes were orientated towards more applied research<sup>2</sup> than to basic/fundamental research (Figure 8). They mainly had between 0 and 20% basic/fundamental research, except in Finland and Denmark where their programmes contained a larger proportion (40% and 58% respectively) of more basic/fundamental research.

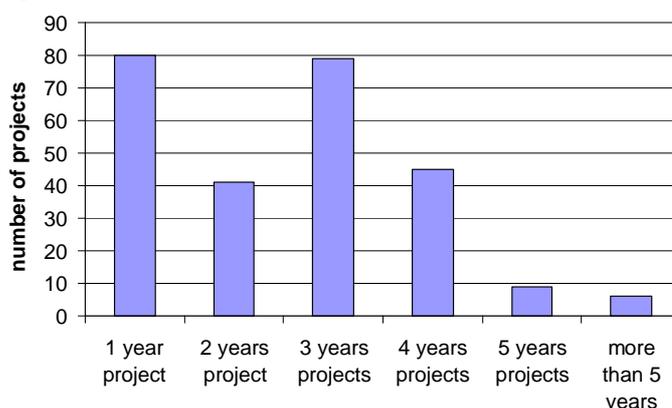


**Figure 8: Proportion of basic/fundamental research per country**  
(average of all the programmes per country)

### National Phytosanitary projects

260 projects were gathered in the database. They were all projects that were on-going in 2007. The full list of research projects can be found in Annex 4.

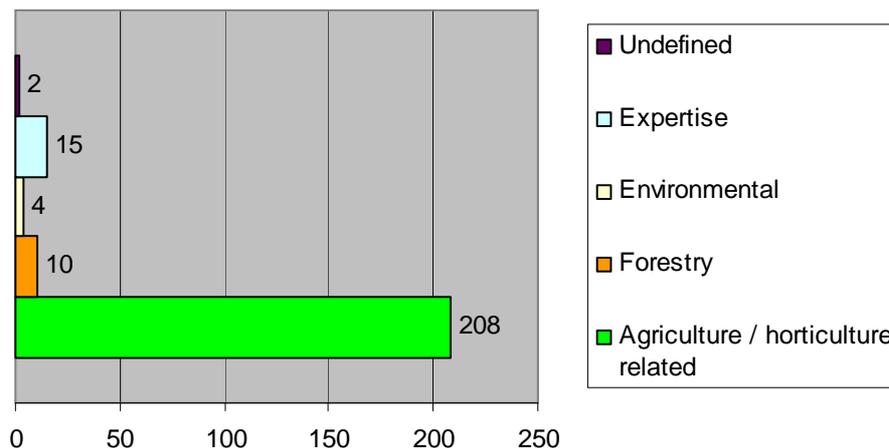
The annual budget range per project was wide since the minimum budget is €350 per year and the maximum was €364,500 per year. Most projects (61%) were in the range €10,000 to €80,000, with an average being €41,144. Most of the projects were funded for 1 or 3 years (Figure 9). However, some of the 1-year projects were not really carried out for 1 year but were continuous projects funded by annual budgets.



**Figure 9: Length of national phytosanitary research projects**

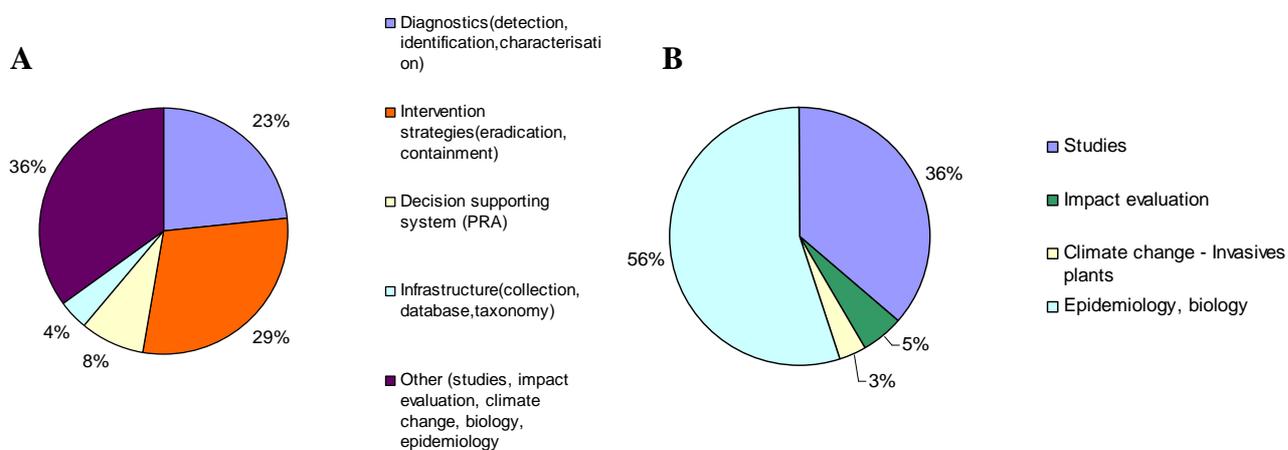
Most of the research projects were related to agricultural or horticultural areas (Figure 10). Those included in the forestry area covered different pests (e.g. beetles, nematodes, fungi). The section named “other” often includes projects also related to the agricultural or horticultural area but were not identified as such.

<sup>2</sup> FRASCATI definitions



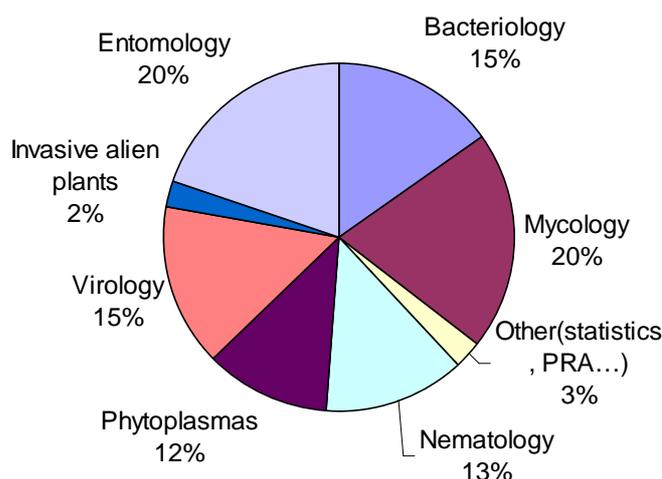
**Figure 10:** Breakdown of the national phytosanitary research projects according to objective areas.

Most of the projects (52%) fell into two major categories: diagnostics and intervention strategies (Figure 11). Few projects were related to infrastructure issues or to decision support systems. Under the “other” types, projects dealt primarily with epidemiology, biology studies or other general studies.



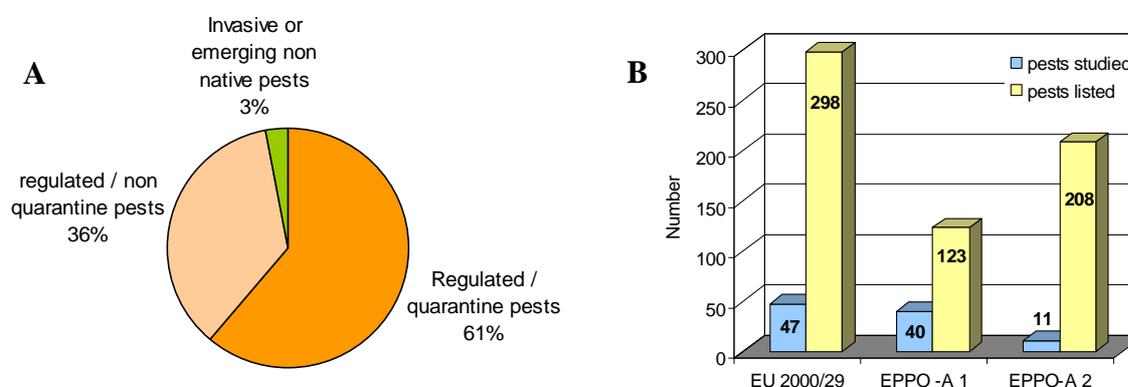
**Figure 11:** Breakdown of the national phytosanitary research projects according to the project types : A- types defined in the questionnaire; B- explanation of the other type.

The research content of the projects was quite well shared between the different types of pest organisms (Figure 12) except for ‘invasive alien plants’ which represent only 2% of the total phytosanitary research (*Ludwigia* and *Ambrosia* species were the main focus of these projects).



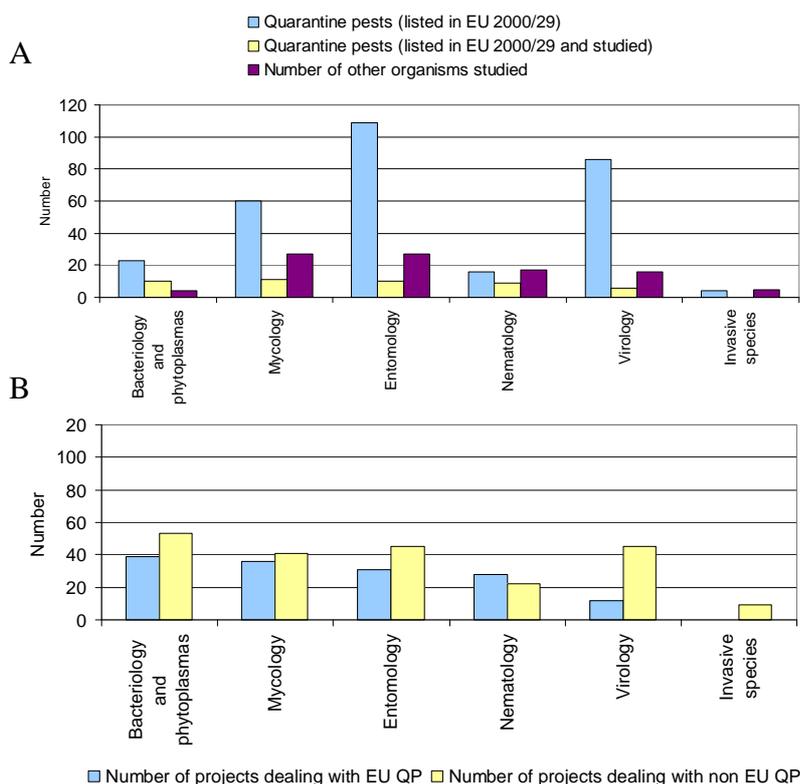
**Figure 12:** Breakdown of the projects according to different disciplines

Approximately half of the projects studied regulated/quarantine pests (Figure 13-A). But when considering the regulated/quarantine pests listed in the European texts (EU Plant Health Directive 2000/29/EC; EPPO A1-A2 lists), few of these organisms were the subject of research (Figure 13-B): 16% of EU listed pests were studied; 15% of EPPO listed A1/A2 pests. All the organisms that were studied in the partners' countries are listed in Annex 5.



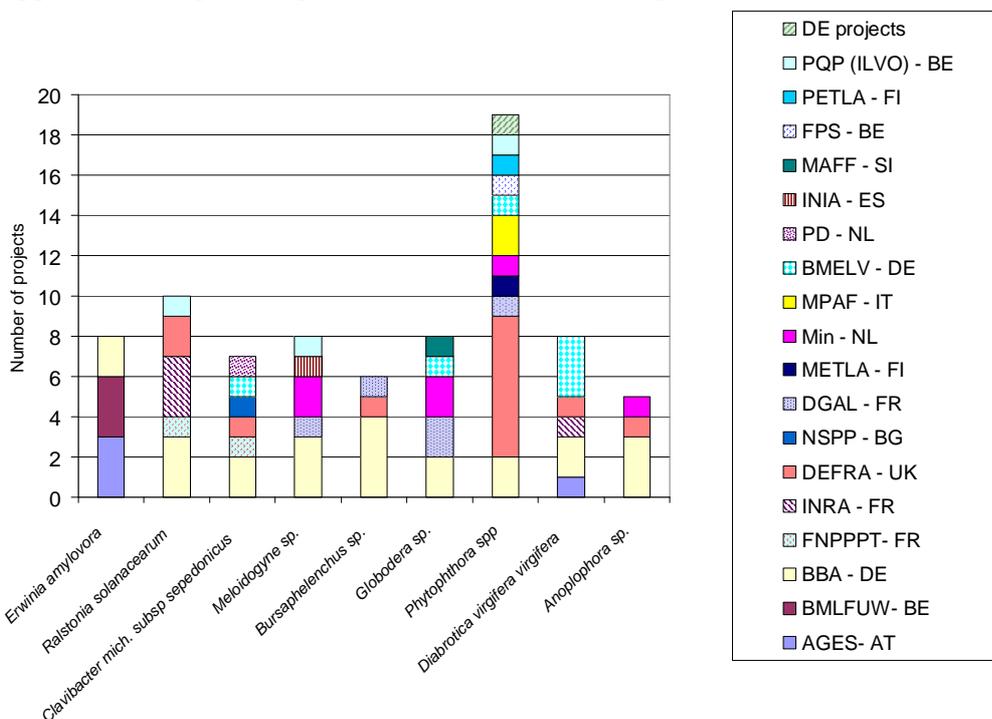
**Figure 13:** Breakdown of the national phytosanitary research projects according to the regulatory status of the organisms studied. A – Proportion of the projects dealing with identified regulated/quarantine or regulated non-quarantine pests; B – Number of regulated/quarantine pests studied in the projects, compared to the ones listed in EU Plant Health Directive 2000/29/EC and EPPO A1–A2 lists.

More precisely, all disciplines, except invasive species, studied quarantine pests, but the proportion can be very different (Figure 14). For bacteriology or nematology, almost half the quarantine pests were being studied (Figure 14). By comparison, virology, mycology or entomology projects had only a small part of the quarantine organisms listed represented in research studies, presumably because of the larger number of listed pests.



**Figure 14: Breakdown of organisms studied in the national phytosanitary research projects : A- according to their quarantine status and compared with EU Plant Health Directive 2000/29/EC; B – expressed by number of projects.**

55% of the projects focussed on 15% of the EU quarantine pests. This unbalanced proportion is partially explained by the fact that several projects focused on the same pest, but sometimes studied with different approaches. Figure 15 presents the 9 most studied pests.



**Figure 15: Number of projects and their national programme for the top nine most-studied pests**

Overall and for fungal projects, *Phytophthora* species currently have the largest number of projects (19) though reflecting several different species; 14 projects were specifically, or included, *Phytophthora ramorum*, which is a recently emerged pathogen problem. For these *Phytophthora* projects, there was at least one diagnostics (detection/identification/characterization) research project per country funding such work, with molecular tools, lateral flow device or ring tests being the key research areas; other topics are more specific and included, for example, epidemiological modelling, eradication strategies, etc.

From a bacteriological point of view, *Ralstonia solanacearum* (potato brown rot) and *Clavibacter michiganensis* subsp. *sepedonicus* (potato ring rot) were being researched in 17 separate research projects, mainly to develop novel diagnostic techniques and to study epidemiology, ecology and the management strategies. For viruses and phytoplasmas, the projects often focused on different organisms such that there was typically only one project on each organism. However, for viruses, grapevine viruses were the predominant research topic (4 projects concerned) together with projects developing new detection/identification tools based on molecular techniques. Some projects also specifically dealt with vectors or plant–virus interactions. For phytoplasmas, half of the projects were on fruit phytoplasmas and half on grapevine phytoplasmas; these all aimed to either develop novel detection tools or to study epidemiology.

For invertebrate pests, there were 22 nematode projects dealing with *Globodera*, *Meloidogyne* and *Bursaphelenchus*. For *Meloidogyne* half of the projects were about diagnostics and others were about the selection of antagonist organisms against this pest, the development of control strategies, sampling methods, and resistance testing methods. For *Globodera*, 6 projects focused on molecular characterization and detection methods.

NB. There might be more projects on the specific pests mentioned since the pest species were not always specified in the project title/description or in the pest species information requested in the questionnaire.

### **European Union projects**

EU-funded projects partly funded by the EU were not included in the national project information. Table 3 summarises the current and recent EU-funded phytosanitary research projects from EU Framework Programmes (FP). When considering all these EU funded projects, the total EU contribution for project commissioned from 1996 to 2007 is €20,556,106, and the average contribution over that period is about €1,173,741 per year. It is much lower compared to the 15Meur of national annual funds (estimated for 2007), but this inventory of EU projects may not be exhaustive, as only FP projects appear in this table (i.e. Plant Health projects in other Programmes, such as the EU Standards Measures and Testing Programme, are not included).

From FP4 to FP6, the subject of the projects have tended to move towards more strategic or generic research (e.g. ALTER BROMIDE), even if there are still pest specific topics (e.g. PEPEIRA for PeMV and RAPRA for *P. ramorum*) that perhaps respond to current emergencies.

The current and indicative topics for FP7 underline more strategic or generic research, e.g. the development of more efficient risk analysis techniques for pests of phytosanitary concern in 2007; a DNA-barcoding topic in 2008.

**Table 3: Current and previous European Framework Programme (FP4-FP7) projects on phytosanitary research**

Name	Title	Start date	End date	EU Contribution (€)	Programme
MONILINIA BROWN ROT DIAGNOSIS	Development of diagnostics and a rapid field kit for monitoring monilinia brown rot of stone and pome fruit, especially <i>M. fructicola</i>	01/02/1996	31/01/1999	1 001 600	FP4 <sup>2</sup>
RINGROT	Epidemiological studies for control of <i>Clavibacter michiganensis subsp sepedonicus</i> , the causative agent of bacterial ring rot in potato	04/01/1999	03/01/2003	758 007	FP4
KARNAL BUNT RISKS	Risks associated with <i>Tilletia indica</i> , the newly listed EU quarantine pathogen, the cause of Karnal bunt of wheat	01/02/2000	31/01/2004	1 312 000	FP5 <sup>3</sup>
DREAM	Durable resistance management of the soil-borne quarantine nematode pests <i>Meloidogyne chitwoodii</i> and <i>M. fallax</i>	01/02/2000	31/01/2004	2 570 125	FP5
DIABROTICA	Threat to European maize production by the invasive quarantine pest, the western corn rootworm ( <i>Diabrotica virgifera virgifera</i> )	01/02/2000	31/01/2003	1 116 037	FP5
DIAGCHIP	Feasibility of an EU plant health directive (77/93/EEC) diagnostic chip	01/12/2001	31/08/2005	994 267	FP5
PHRAME	Development of an improved pest risk analysis techniques for quarantine pests, using pinewood nematode, <i>Bursaphelenchus xylophilus</i> , in Portugal as a model system.	01/02/2003	31/01/2006	2 108 301	FP5
RAPRA <sup>4</sup>	Risk analysis for <i>Phytophthora ramorum</i> , a newly recognised pathogen threat to Europe and the cause of Sudden Oak Death in the USA	01/01/2004	31/03/2007	1 340 000	FP6 <sup>5</sup>
PORT CHECK <sup>6</sup>	Development of generic on site molecular diagnostics for EU quarantine pests and pathogens	01/03/2004	01/10/2007	1 370 000	FP6
DIABR-ACT	Harmonise the strategies for fighting <i>Diabrotica virgifera virgifera</i>	01/06/2006	31/05/2008	974 703	FP6
ALTER BROMIDE	Dissemination of sustainable alternatives to methyl bromide	01/09/2006	31/05/2009	500 000	FP6
PEPEIRA	<i>Pepino mosaic virus</i> : epidemiology, economic impact and pest risk analysis	01/02/2007	31/01/2010	801 069	FP6
PRATIQUE	Development of more efficient risk analysis techniques for pests and pathogens of phytosanitary concern	01/04/2008	31/05/2011	2 760 000	FP7
SHARCO	Containment of Sharka virus in view of EU-expansion	Due to start	-	2 950 000	FP7

1: Excludes projects funded under other EU programmes (e.g. Standards, Measures and Testing Programme; COST; etc.)

2: [http://cordis.europa.eu/guidance/fp4\\_fr.html](http://cordis.europa.eu/guidance/fp4_fr.html)

3: <http://cordis.europa.eu/fp5/>

4: <http://rapra.csl.gov.uk/>

5: <http://cordis.europa.eu/fp6/projects.htm>

6: <http://www.portcheck.eu.com/index.cfm>

### III. PROGRAMME MANAGEMENT

This third section of the questionnaire aimed to gather information on management procedures, e.g.: procurement routes; proposals/applications; evaluations; contract types and issues; monitoring approaches; reports; and management-related barriers to trans-national cooperation (barriers are dealt with specifically in Section V) . Some ‘national’ tools (templates for proposals, evaluations, appraisals, research contracts, etc.) were also provided via the on-line questionnaire. The information was obtained in order to help Workpackage 3 in the development of common EUPHRESKO instruments to facilitate trans-national activities.

Table 4 presents an overview of the responses per country and per programme. For one programme, it could be possible to have more than one set of management procedures. Indeed, management procedures could be linked to the projects within the programme and not to the programme directly. The questionnaire was made so that it was possible to link management procedures to projects or whole programmes.

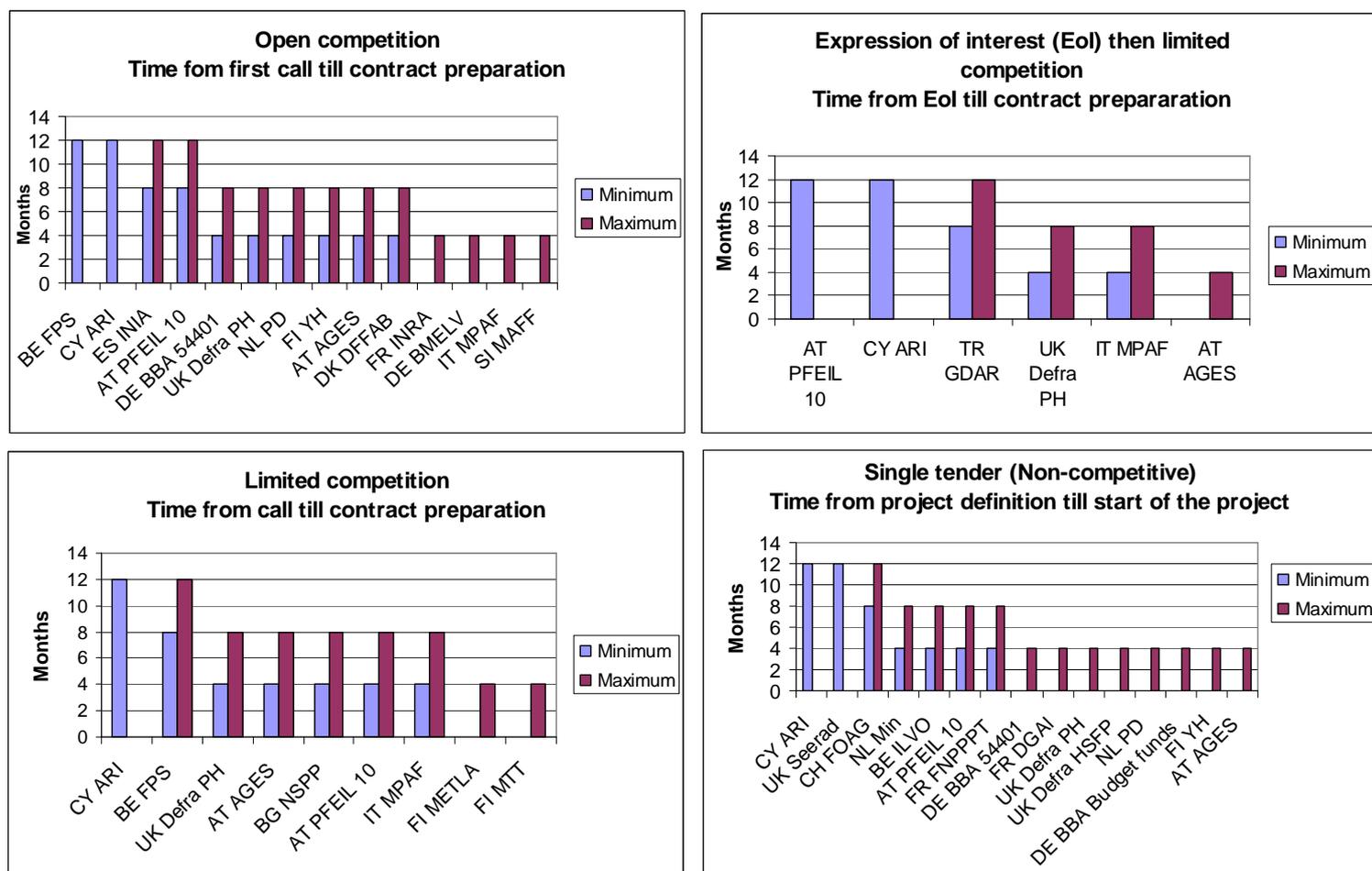
The inventory of these procedures was divided into five clearly separated sub-sections: project initiation; project application; evaluation of proposals; project management; and research contracts (*Annex 2 Partner Questionnaire*)

**Table 4: Inventory of management procedures per country, partner and programme.**

Country	Name of the partner	Programme for which management procedures were supplied
Austria	AGES	AGES research
	BMLFUW	PFEIL10
Belgium	ILVO	ILVO
Belgium	FPS	FPS
Bulgaria	NSPP	NSPP
Cyprus	ARI	ARI
Denmark	DFFAB	DFFAB
		Nordic Joint Committee
Finland	MMM	YH
		MTT
		METLA
France	DGAL	DGAL
	FNPPPT	FNPPPT
	INRA	INRA
Germany	BMELV	EH
	BBA	544001
		Budget funds
Italy	MPAF	Voluntary submission
Netherlands	PD	PD
	Min LNV	Min
Slovenia	MAFF	Slovenia
Spain	INIA	INIA
Switzerland	FOAG	FOAG
Turkey	GDAR	GDAR
United Kingdom	DEFRA	Plant Health
		CSL HSFP
	SEERAD	SEERAD

## Project initiation

This section gives an idea of the main features of the initiation phase of phytosanitary research projects. Figure 16 highlights the different timescales according to four different procurement routes: open competition with full proposals; expression of interest (EoI) followed by invitations for full proposals; limited competition with full proposals; and single tender (non-competitive).



**Figure 16:** Timescales related to different procurement routes used by national research programmes

Most of the programmes initiated projects through full open competitions and non-competitive single tenders. Generally speaking, it takes less time to implement a single tender (with a preferred research provider) than with an open competition. The overall duration of the complete procedure ranged from 4 months to more than 12 months at maximum. Timescales depend on the emergency of the topic, on the size (in Euros) of the projects and on the theme. Some programmes have hardly any calls (AT-BMLFUW; NL-Min; FR-DGAL) and most of them have both competitive and non-competitive funding systems.



**Table 5: Types and frequency of research providers involved in competitive projects across all the EUPHRESCO partner's programmes**

<b>Body competing in the programmes</b>	<b>Number of occurrences</b>
Universities	18
Non-governmental public bodies	16
Government/government agency laboratories	16
Private companies/institutes/small businesses	13
Local/regional public administrative bodies	8
Institutions from foreign countries	3

Requirements for applications are adapted for the different procedures (especially competitive and non-competitive procurement routes) and therefore are quite diverse. As expected, the main elements that needed to be addressed in proposals were: introduction/abstract/summary; aims/objectives; description of work; relevance, time plan/milestones; cost plan available and requested resources (Table 6).

**Table 6: Elements, and their frequency, that are addressed in proposals**

<b>Elements addressed</b>	<b>Occurrences</b>
Introduction / abstract / summary	24
Aims / objectives	24
Description of work	24
Relevance	23
Time plan / milestones	23
Cost plan available and requested resources	23
State of the art / preliminary work	22
Benefits	20
Quality and expertise of the consortium	19
Communication / dissemination /technology transfer	17
Risks to achieving objectives	13
Quality assurance	10
Ethics	10
Intellectual property	7
Insurance / liability	6

The ways of formal submission of a proposal are varied: paper and electronic systems are the most common ways of submission for 8 and 9 programmes respectively. Paper versions are obligatory for 11 programmes and electronic submission is also obligatory for 11 programmes (but not always the same): paper submission was obligatory for the national programmes in Bulgaria, Cyprus, Denmark, Finland-MMM-YH, Finland-Metla, Germany-BMELV, Italy Slovenia, Spain, Turkey and United Kingdom Defra Plant Health.

For competitive research, out of the 8 programmes, only the Italian one uses a 2-step application procedure with expressions of interest followed by full proposals. The 7 other programmes only have a 1-step full proposal process.

## Evaluation of proposals

### *Current evaluation procedures in national phytosanitary programmes*

This part of the questionnaire covered the selection and type of evaluators as well as the evaluation procedures and criteria applied. The questionnaire differentiated between competitive and non-competitive procurement routes. Generally speaking, the evaluation procedures for competitive routes were much heavier than for non-competitive ones.

For competitive routes, proposal evaluations mostly involved a two-step or a three-step approach. INIA (Spain) and BMLFUW (Austria) use a four-step evaluation procedure. The two main steps can be largely summarised as follows:

- The first step can be either an evaluation of a draft proposal or the full proposal. It can be done either by internal, external or anonymous peer reviewers/experts. Sometimes after the first evaluation, it is possible for applicants to improve their proposals and it is also an opportunity to group together similar project proposals (Slovenia, Turkey).
- The second step is done with full proposals and is internally done by specific panels (discipline based), experts and scientists from the management organisation. At the end of the evaluation, relevance of the application should be checked in respect to both through technical and policy issues. In some programmes, standing committees/boards are used (Italy, Bulgaria, Turkey, France-DGAL); in others, proposals are peer reviewed by 2 or 3 independent scientific experts, or by panels with at least 2 people. Ranking and scoring systems are used (Finland, Turkey, Denmark Nordic committee, UK Defra, Slovenia); 15/28 respondents to the questionnaire indicated that specific evaluation forms and guidelines were used.

For non-competitive routes, evaluation processes for some countries were more or less the same as for competitive ones (Bulgaria, Austria BMLFUW). However, in most cases, when both procurement routes are used, the evaluation procedures for non-competitive routes are lighter (especially because there are preferred research providers). For The Netherlands (LNV) and United Kingdom (Defra), the non-competitive evaluation process is implemented in 2 or 3 steps (assessment of the proposal by a small steering group and then a higher level programme project management group); Defra projects above £250,000 (c. €375,000) have to be peer reviewed, though Projects <£250,000 are also often peer reviewed as part of best practice.

In both cases (competitive and non-competitive research programmes), the main evaluators were the funding body (programme funder/manager) and independent expert scientists/reviewers (Table 7). Government Ministry/Policy Customer were involved in about half of the programmes and seemed to be less involved in the evaluation of competitive projects than for non-competitive ones. In a few programmes, grower bodies could also be involved in the evaluation process.

**Table 7: Stakeholders involved in evaluation process**

<b>Stakeholders</b>	<b>Number of occurrences</b>
The funding body (programme funder/ manager)	32
Independent expert scientists / reviewers	24
Government Ministry / Policy customers	17
Industry bodies / representatives (grower/trade associations or unions)	8

Table 8 shows the ranking of the evaluation criteria taken into account in all the programmes according to their frequency of occurrence. To perform the evaluation task, evaluators work with the full proposals in all cases, with curriculum vitae of the applicants and information about budget and costs for half of the cases. Others are provided with confidentiality forms, appraisal forms, etc.

**Table 8: Ranking of applied evaluation criteria**

<b>Evaluation criteria</b>	<b>Occurrences</b>
Scientific quality of the proposal	25
Relevance to the programme/objectives	25
Expected benefits of the research	25
Expertise of applicant/consortium	24
Feasibility of the research	20
Project/resource management	19
Value for money	18
Multidisciplinary	14
Ethical/safety issues	11
Novelty, originality of proposal	8
Involvement of ‘special’ people (young scientists, given institute)	5
Innovative potential	4
Gender balance	2

## **Project management**

This section of the questionnaire dealt primarily with management processes and tools for monitoring projects. In a general way and without any surprise, interim and final reports are the most common tools to control and monitor projects. However, we can differentiate 2 main procedures: ‘heavy’ procedures and ‘light’ procedures. The lightness/heaviness of the monitoring procedures can depend on the size (budget) of the projects. For example: small projects in the BBA (Germany) ‘54401’ programme only require final reports; larger projects (>€25,000) in the PD (Netherlands) programme have a management committee established to monitor the project. For continuous and long-term projects, there is generally a continuous monitoring of the project progress by the project leader with yearly progress reports containing outputs of the research. At ILVO (Belgium), long-term projects are revised every two years; long-term FNPPPT (France ) projects are refined/re-oriented once a year.

### ***‘Heavy procedures’***

Examples included the UK (Defra Plant Health), Austria (Pfeil 10), Turkey and Slovenia.

For Defra (UK), each project is overseen by a steering group composed of one person from policy (Defra Plant Health Division), one person from the inspectorate (Defra PHSI) and one person from the Central Science Laboratory (Defra CSL) who would be an end-user of the research. Annual reports (SID4) are required on a standard form, as is a final report (SID5 and SID5a). Reports are appraised by the Research Programme manager and agreed with the steering group before being signed off by the Head of Plant Health Division. Appraisals consider quality and delivery of science, technology transfer, impact and relevance of results to policy. In addition to the final report appraisal, final reports may also be peer reviewed externally.

For Austria, all management procedures are facilitated through a web-based system at [www.daphne.at](http://www.daphne.at). Periodic reports are required and evaluated. There is pre-financing with further instalments and with the last instalment following approval of the final report: each instalment is connected to the submission of a report; reports are submitted to [www.dafne.at](http://www.dafne.at).

For Turkey, evaluation of ongoing projects is in two stages. As a first step, project leaders, either from the contractor part or the ministry depending on each project, evaluate their own project and then submit them to the relevant research department as a report. As a second step, the relevant research science committee evaluates it. In both cases, marks are given to indicate the degree to which the objectives have been met and whether they were met on time. The final reports are then sent to GDAR together with a form completed by the project leader after the research committee evaluation.

For Slovenia, the project leader from the contractor partially runs and co-ordinates the main activities within the project group and supervises the spending of the resources. The contractor and the project leader are responsible for the complete realisation of the project by phases and dynamics laid down in the project documents. The contractor is obliged to submit to the funding body a final report (paper and electronic form for online publication), a project summary in Slovene and English, and by agreement the contractor shall prepare appropriate public dissemination activities and publication of outputs. During the project, the contractor is obliged to keep working documents on the project progress, draw up mid-term (phase) reports, annual financial reports and final reports on the research results which include an overview of the work carried out and costs incurred in accordance with the instructions of the funding body.

### ***‘Light procedures’***

Examples include INRA (France), BBA (Germany), PD (Netherlands), ILVO (Belgium).

INRA (France) requires interim and final reports without specific monitoring or the need for financial reports.

For the BBA (Germany) ‘budget fund’ programme, there are no strict rules. BBA produces a public available annual report where most of the research is summarised.

For the CSL (UK) Defra-funded HSFP programme, only short reports are required and these are not evaluated nor made publicly available.

### ***Payment schedules***

The questionnaire did not specifically ask about payment procedures but some programmes provide information and it is summarised here.

Some countries require financial report statements others do not. For some countries, monitoring is related to progress with objectives and cost statements. MAPF (Italy) is a good example of that: after the first advance payment (50% of the whole amount for the project), payment of the remaining funds is determined by the project progress report. For MAPF projects financed until September 2004 (some projects are still in progress under this procedure) the project co-ordinator submits scientific reports together with cost statements periodically during the project life and then a final report with the main goals and deliverables achieved. The only deadline is to complete project activities by the date indicated in the Ministerial Decree of the contribution (usually three years). For MAPF projects financed after September 2004 the procedure is as follows: advanced

transfer of 50% of the resources assigned to the project (first contribution); a scientific report at the end of the first year of activity (second contribution); final report (final contribution).

For Finland, total payment of the project is also related to project monitoring: a specific steering group is appointed for each research project. This group meets 1-2 times per year and observes the project's progress. Annual progress reports of the project are sent to the Ministry by the end of October. Essentially, the grant is provided for three years but continuation of the project is decided annually based on an evaluation of progress. There is also a final project report at the end of the project. The final 15% of the total funds is paid to the project after the final report is received and accepted.

In Slovenia, the contractor submits to the funding body a mid-term or final written report on the work done no later than 30 days before the final payment is due.

In the UK, payments tend not to be linked to project milestones, although they can be under specific circumstances. However, it is more typical for payments to be made in monthly instalments, regardless of whether projects are tendered through a competitive or non-competitive procedure.

### **Research contracts**

Most of the partners have no formal research contracts: e.g. for ILVO (Belgium), the project is either accepted or not, but without a contract; in Switzerland (FOAG), there is a general research plan rather than a particular research contract for the project. Defra (UK) uses contracts with specific terms and conditions for certain projects; for its main research providers it has simpler Research Framework Agreements under which projects are let and administered.

IPR can be defined by national/ regional rules but the funding organisation can also choose not to define IPR rules (e.g. Turkey, France-DGAL). The owner can be the researcher; the funding organisation, the ministries, the contractors or both the contractor and the funder can also share them. Consortium agreements may be a tool to organise IPR (e.g. ILVO Belgium, European projects). IPR policy can be flexible and adaptable to the specificity of the projects.

### **Synthesis of partner's documents**

When completing the questionnaire, partners had the opportunity to attach national documents, e.g. rule books or handbooks, proposal/application forms, proposal evaluation guidelines and forms, programme objectives, examples of research contracts, annual/final project report forms, report appraisal forms, etc. Table 9 summarises the collected documents through this mapping phase. They will be used by WP3 to help establish the EUPHRESKO trans-national tools and processes.

**Table 9: National documents (number) for project management that were submitted as part of the mapping and information gathering (F: form; P: procedure; O: other)**

Country	Partner	General rulebooks	Project application / proposal procedure	Evaluation of project proposals	Project management	Research contracts
Austria	AGES	5 F	1F + 1P	1F		1F
Belgium	FPS	1				
Belgium	ILVO		1 (database)			
Bulgaria	NSPP		1 P			
Cyprus	ARI	1 O				
Denmark	DFFE	1 O	1 F			
Finland	MMM		1 F	1 F		
France	INRA		1 F	1 F		
Germany	BBA					2 F
Italy	MPAF		1 F	1 F		
Netherlands	Min		1 O	1 F	1 F	2 F
Netherlands	PPS		1 F	1 F		1 P + 1 F
Slovenia	MAFF		1	1 P	1 O	1 F
Spain	INIA	1 O	3 F	1 F		1 F
Switzerland	FOAG	2 O				
Turkey	GDAR	2 O				
United Kingdom	DEFRA	1 P + 5 F	2 F	1 F		1 F
United Kingdom	SEERAD	1 O				

#### IV. NATIONAL PHYTOSANITARY RESEARCH LANDSCAPE

215 governmental/public research providers are listed in the database. These are mainly public research agencies/institutes and universities. In addition to research providers, information was also submitted on key non-governmental stakeholders: 98 non-governmental stakeholders were identified, mainly grower councils/organisations, experimental centres. The exhaustive list per country can be found in Annex 6.

#### V. FUTURE TRANS-NATIONAL ACTIVITIES

##### Potential barriers to trans-national activities

The questionnaire tried to grasp the different barriers for the different steps involved in potential commissioning of EUPHRESCO trans-national activities/research. These are detailed below under the relevant headings.

##### *Project initiation:*

For future trans-national activities, the main barriers that exist in relation to project initiation were:

- Some programmes have preferred research providers (non-competitive procurement route) and/or are not relevant for trans-national activities that have a competitive mechanism (virtual pot or real common pot) because they are internally funded.
- Topics for pilot projects should be listed in the programme rationale of the participant country and/or to be in the remit of directive lines of the national plant

protection service (PFEIL 10 for Austria, ROAME for UK) and should comply with the needs of the policy units.

### ***Call for research projects:***

Language can be a barrier: indeed for 6 respondents (ILVO- Belgium, Bulgaria, Germany, UK - SEERAD and Defra, Slovenia), joint calls have to be produced in the national language. Consequently, it is possible that some EUPHRESKO joint calls might need to be first produced in English and then translated in the national languages when necessary. Electronic system submission could be a barrier for BMELV (Germany).

### ***Publication of call:***

Nine partners stated that they have legal issues relating to the publication of national calls while 15 did not. According to the public procurement law, above a certain threshold of given costs, an EU-wide call must be done. Below this threshold, the call must only be made public.

### ***Evaluation process:***

A fully external evaluation process for proposals submitted for future EUPHRESKO trans-national funding would probably not be feasible for a variety of reasons, including cost and funders preferences. Again, language could be a barrier for some countries. Defra (UK) prefers that project proposals are peer reviewed. Defra considers that, depending on monetary values of projects, any evaluation process for future trans-national projects should ideally be no less stringently peer reviewed than Defra-funded projects. Procedures that put a lot of emphasis on the topic area while putting little emphasis of scientific quality/merit may be a problem for INRA. EUPHRESKO trans-national activities will also have to have harmonised evaluation processes since there is a lack of mutual recognition of the national procedures and results.

For EUPHRESKO partners, they generally considered that evaluation procedures had to be as simple as possible, cost effective, fair and objective. Additional burdens on administration and research providers have to be avoided as much as possible in future trans-national programmes and calls, whilst ensuring scientific and administrative quality. Different stakeholders from different sectors (funders/ministries, representatives of growers, etc.) could be involved in the evaluation process. One EUPHRESKO partner had a preference for a competitive process and for a scientific evaluation. An independent peer review of proposals followed by a final decision by a tender of evaluation panel comprising funders could also be considered. Another partner would prefer a two-stage evaluation procedure involving first independent experts and then a decision by a decision making body. It was also suggested that the evaluation should be done by the traditional evaluation bodies of the partners involved in a trans-national activity.

### ***Reports and procedures:***

For EUPHRESKO future trans-national activities, it is likely that joint reports and procedures will be in English; this might be a potential barrier for some countries. Another consideration might be the complexity and intensiveness of reporting: too intensive and complex reporting requirements that place an undue burden on research providers and the funding bodies might potentially discourage participation in future trans-national activities. Reporting procedures should be simple, efficient, fit for purpose whilst still ensuring quality.

### ***Funding process:***

The questionnaire tried to grasp the different barriers according to the three funding mechanisms envisaged for EUPHRESKO (real common pot, virtual pot and non-competitive consortium – see definitions in Annex 3). The barriers were classified as follows: the first barrier is the one for which ‘very strong barrier’ was ticked most of the time, then ‘strong barrier’ was ticked most of the time and then ‘weak barrier’ was ticked less often also.

**Table 10: Barriers for a real common pot and for a virtual pot**

Real pot	occurrences	Virtual pot	occurrences
Barrier	Very Strong		Very Strong
Limited or unavailable funds	13	Limited or unavailable funds	4
Legal issues	10	Financial inflexibility	3
Financial inflexibility	10	Inability to make funds available quickly	3
Inability to make funds available quickly	9	Legal issues	2
Inability to fund researchers in other countries	8	Programme rationale	1
Fixed overheads restricting participation	5	Fixed overheads restricting participation	1
Programme rationale	4	Inability to fund researchers in other countries	1
Lack of experience in working with foreign research funders	4	Data and information access issues	0
Inability to work with other/foreign funders	4	Language issues	0
Data and information access issues	3	IPR Issues	0
IPR Issues	3	Lack of experience in working with foreign research funders	0
Language issues	3	Inability to work with other/foreign funders	0

- For the real common pot, some funding organisations might have legal issues or barriers that prevent them signing other funding organisations contracts in any co-funding initiative. For example, Defra (UK) generally does not like to sign other organisations contracts but prefers to use its own standard terms and conditions. Defra may also have problems signing any standard/common contract that might be produced within EUPHRESKO for use with a real common pot; it may either require a separate Defra contract with contractors, or else provide funds under a memorandum of understanding (M.o.U.).

- There does not appear to be an easy way to harmonise national contracts in order to produce a common EUPHRESKO contract for use with any real common pot call.

- Any common contracts should also be available in German and the German law e.g. German Civil Code must be applicable.

- The contracts of ‘budget funds’ programme (BBA) are contracts of employment. Usually they are for an unlimited period and it is not possible to change personal for certain projects. Normally, there are no new positions for new research projects with the ‘budget funds’ programme.

Of the 22 responses, the four main barriers (Table 10) to trans-national collaboration for the real common pot and for the virtual pot were the same: limited or unavailable funds; legal issues; financial inflexibility; and inability to make funds available quickly. For the non-competitive consortium, answers were slightly different and highlighted two additional main barriers: inability to fund researchers in other countries since funders prefer research providers from their own country; and programme rationale (Table 11).

**Table 11: Barriers for non-competitive mechanism**

Non competitive mechanism	occurrences
	Very Strong
Inability to fund researchers in other countries	8
Programme rationale	5
Limited or unavailable funds	4
Financial inflexibility	4
Inability to make funds available quickly	3
Legal issues	2
Lack of experience in working with foreign research funders	2
Fixed overheads restricting participation	1
Language issues	1
Data and information access issues	1
Inability to work with other/foreign funders	1
IPR Issues	1

Just to illustrate how programme rationale can be a barrier, the French FNPPPT (potato producer federation) is a good example: this federation is funded by the potato growers, therefore they can only fund research themes that are on potato. Similarly, Defra (UK) cannot fund work related specifically to quarantine forestry pests since these are the responsibility of The Forestry Commission in Great Britain; however, non-tree work could be funded on quarantine tree-related pests if they were also associated with non-tree species (e.g. *Phytophthora ramorum* and *Anoplophora* species).

## **Long-term research agendas, collaboration and expected benefits**

### ***Future research agendas***

In order to begin development of common research agendas for after the end of the EUPHRESKO ERA-Net in 2010, respondents were asked to indicate priorities for future phytosanitary research. Responses were intended to simply be a starting point, since priorities and research needs are likely to change in the next 2-3 years. From the responses received, two main themes were highlighted: aspects related to Pest Risk Analysis (PRA); and diagnostics (raw list in Annex 7).

Pest Risk Analysis: PRA's are not available for a wide range of quarantine or emerging plant pests nor for many commodities. For those that do exist, there are typically gaps in knowledge that could be met through research. Better PRA methodology is also an issue, especially incorporation of socio-economic and environmental impact analyses. PRA is still in its infancy as a discipline and has to be improved to become a more reliable tool to inform regulatory policy.

Diagnostics: This includes detection methods, identification methods, ring testing and method validation. There is a continuing need for rapid and reliable detection methods for inspection services to detect quarantine pests/pathogens at the point of entry into the EU or at other on-site locations. Better detection methods are also needed for difficult substrates (e.g. soil, wood). Similarly, there are increasing needs for faster and more reliable laboratory-based identification methods. Some methods lack of robustness, or specificity and are quite difficult to handle and are time-consuming, labour intensive and costly. Some standard diagnostic methods at the European level need to be improved or developed for some pests. High throughput laboratory-based methods are also needed, e.g. real-time PCR methods, microarrays/diagnostic chips, etc. Linked to this is the need for methods to be properly validated through prescribed processes and through ring testing. This will also aid initiatives for better cooperation between European phytosanitary diagnostic laboratories. Diagnostic expertise, and underpinning taxonomic expertise, is being lost little by little and experts are becoming less and less numerous; research and development that will maintain and develop further European diagnostic expertise and wider EU cooperation between laboratories will prove invaluable.

Other specific research themes were also quite recurrent:

- **Seed testing**: Development and validation of rapid and efficient seed testing methods, preferably non-destructive, is needed for seed-borne pests of plant health concern. There are few properly validated seed testing methods for seed-borne EC-listed quarantine pests. Most existing international protocols are provided via the International Seed Testing Association (ISTA), which does not have funds to develop methods. There is some method development done under The International Seed Health Initiative for Vegetable Crops (ISHI-veg), which is run and funded by several collaborating private seed producing companies. There is therefore a need for European research on seed testing methods for quarantine/regulated pests.

- Management strategies for pests which are subject to phytosanitary regulations and which are difficult to control. Many quarantine and regulated pests are difficult to eradicate/contain due to pesticide resistance, limited availability of pesticides or constraints imposed by cropping practices. There is a need to develop new management methods for these pests, including for non-native invasive plants.

- Development of management options for the treatment of biodegradable waste and renewable raw materials contaminated with pests of phytosanitary concern. Safe environmentally friendly disposal of quarantine waste is a growing issue due to reduction in the number of existing disposal methods due to environmental legislation.

- Infrastructure: there is a need to further develop or integrate informatics systems in support of plant health (informatics systems that cover: reference standards; culture/type materials/symptoms/morphological descriptions; identification keys; databases; DNA barcoding methods; photographs and text resources for harmful organisms). Technical platforms could be built by gathering actual infrastructure for international access to share ‘heavy investments’. A special need was mentioned in forestry and entomology to build an European network of forest protection and phytosanitary specialists and to promote training periods and information exchange between European laboratories in entomology.

- Climate change: a study of the impact of climate changes on the distribution of quarantine pests and diseases would be useful. In this context, potato pathogens were specially quoted: with warmer temperatures, there is a risk of development of non-European strains or diseases (bacteria, viruses, etc.).

- Nematodes: several partners manifested an interest in focusing on nematology: molecular methods for screening nematodes in potato and strawberry (*Globodera* spp, *Aphelenchoides* spp), pine wood nematode (development of remote sensing technology and optimisation of the monitoring procedure, maintenance of pest free areas), *Meloidogyne* geographical distribution, alternative control and eradication methods.

Other topics that were suggested, but much less frequently than the previous ones (only once or twice), included: developing sampling methods; research underpinning contingency plans; research that would support third countries exporting plants or plant products to the EU, ensuring that they can better meet EC requirements; alternative control (eradication/containment) methods to chemicals.

Some other specific pests were also mentioned on a few occasions.

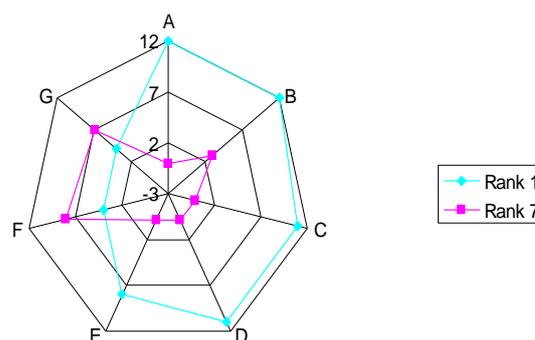
### **Collaboration between countries and expected benefits of collaboration**

In a general way, collaboration between countries would depend on the specific topics. It would also be facilitated between countries that share the same or similar phytosanitary problems. One of the keys to the success of future trans-national activities may be to work on several ‘small’ projects with few funders, though it is equally possible that consortia involving a lot of funders may alternatively initiate larger projects. Both approaches are valid and could be used, depending on the topic area. There are also clearly some research topics that might better suit EU FP7 funding (perhaps larger, more strategic or generic projects), and others more suited to EUPHRESCO trans-national funding (perhaps more applied, specific or ‘emergency’ projects). Trans-national research might complement EU-funded work, or even involve collaborative EU and national funding; trans-national research might act as a precursor to EU-funded projects, or add value to EU-funded projects once they are completed by funding follow-up work to make best use of the EU-funded outputs.

Partners were asked to rank expected benefits (Table 12) from the most important benefit for them (rank 1) to the least important (rank 7). Consensus priority is quite obvious for rank 1. The most expected benefits split into two major aspects: national interest (improving research capacity and expertise and optimisation of funds use) versus European interest (with facilitation of long-term collaboration between European funders and support of policy). On the other hand, from the options proposed, enabling the adoption of best operational practices for research management and greater international interaction with non EU-plant health bodies are ranked as the least important expected benefits from trans-national co-operation.

**Table 12: Expected benefits from trans-national collaboration and representation of ranks 1 and 7.**

Benefit	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7
A - Building national research capacity and expertise	12	7	2	2	3	1	0
B - Optimisation of national programme funds	12	6	2	2	0	2	3
C - Facilitate long term collaboration between European funders	11	8	3	1	3	1	0
D - Better support for policy	11	1	6	3	2	4	0
E - sharing information on national phytosanitary research programme	8	3	5	8	3	0	0
F - To enable the adoption of best operational practices for research management	4	3	2	1	4	5	8
G - Greater international interaction with non-EU plant health bodies	4	0	1	6	6	3	7



In conclusion, regarding expected benefits, EUPHRESKO Partners mainly anticipated that EUPHRESKO would help to: build national research capacity and expertise; facilitate long-term collaboration between European funders; optimise national programme funds; and provide better support for EU plant health policy.

## **B - INFORMATION FROM NATIONAL PROGRAMMES FOR NON-PARTNERS (OUTSIDE THE EUPHRESKO CONSORTIUM)**

### **I. PRESENTATION OF THE QUESTIONNAIRE**

EPPO was actively involved in the dissemination of the information concerning EUPHRESKO. All the countries that were not full partners of EUPHRESKO but members of EPPO were contacted (Albania, Algeria, Belarus, Croatia, Israel, Jordan, Kazakhstan, Kyrgyzstan, Latvia, Luxembourg, Republic of Macedonia, Morocco, Norway, Poland, Romania, Russia, Serbia, Slovakia, Sweden, Tunisia, Ukraine, Uzbekistan; The EUPHRESKO Observer countries, Estonia, Greece, Hungary, Lithuania, Malta, Portugal) and asked to provide information on their phytosanitary research, if any existed.

To enable data collection, the questionnaire was adapted (Annex 8) into a 'lighter' version and made available for non-partner countries to complete via the EUPHRESKO website. It comprised the following sections and the information provided by the non-partners is summarised below:

### **II. FUNDERS/MANAGERS OF PHYTOSANITARY RESEARCH PROGRAMMES**

Estonia, Hungary, Morocco, Poland and Ukraine filled in the non-partner questionnaire. All of these respondents are ministries funding and/or managing phytosanitary research. Although these questionnaires were not all fully completed, they gave an indication of the phytosanitary research being done.

### **III. PROGRAMME INFORMATION: RESEARCH CONTENT**

These non-partner countries entered data from 11 different programmes; one partner presented only 1 programme, whereas three other presented either 3 or 4 programmes (Table 13).

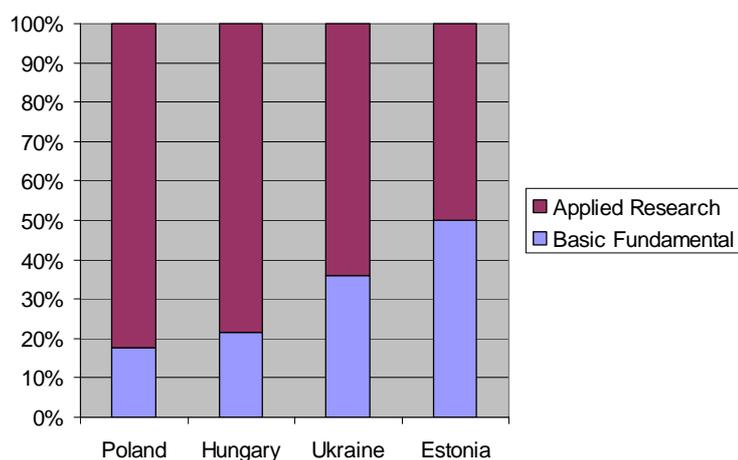
**Table 13: National phytosanitary programme per country for non partners**

<b>Country</b>	<b>Programme</b>
Estonia	National Programme " Applied Research and Development in Agriculture in 2004-2008"
	Targeted financing 2007
	Grants of the Estonian Science Foundation
Hungary	Market-oriented Agricultural Research (GAK)
	Economic Competitiveness Operational Scheme (GVOP)
	Hungarian Scientific Research Fund (OTKA)
Poland	Maintaining and use of a biodiversity and environmentally safe agricultural methods of horticultural production (fruit and ornamental plants and apiculture)
	Improvement of plants for balanced agro-ecosystems, high quality food and plant production for non-consumption purposes.
	Development of balanced methods of cultivation and protection of vegetables and mushrooms in order to ensure their high biological and nutritious quality and maintain environmental biodiversity and protection of natural resources.
	Protection of crop plants taking into account food safety as well as reduction of yield losses and risk for human health, livestock and environment
Ukraine	Phytosanitary regulation of pests in Ukraine

Of these 11 programmes, 36% were co-funded. Most of these programmes (73%) were national programmes, whilst 27% were qualified as other. A large proportion of the programmes (91%) were part of larger research programmes.

The average budget for these programmes (data available for only 7 programmes) was €225,313 euros ranging from €18,131 to €430,800 euros

The non-partner countries’ programmes were mainly focussed on more applied research (Figure 18). However, for Estonia, this proportion appears well balanced probably because of the broad objectives of their programmes.

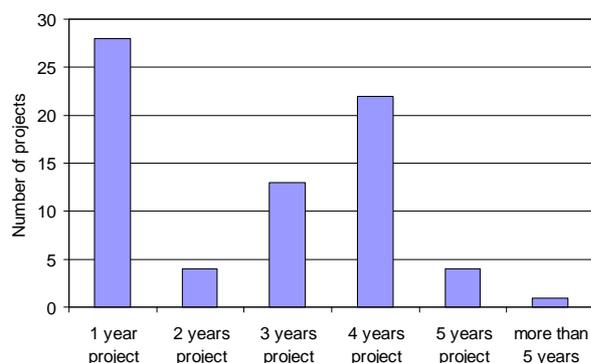


**Figure 18:** Proportion of basic / fundamental research per non-partner country (average of all the programmes per country)

### National phytosanitary projects:

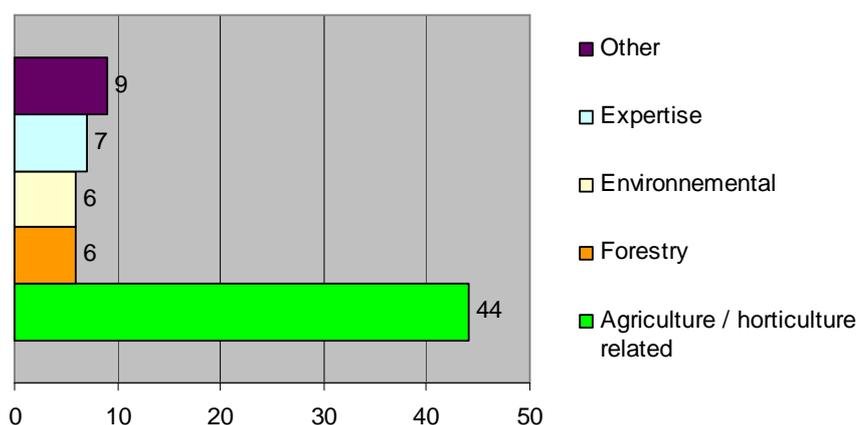
72 projects were gathered in the database non-partner section. They were all projects that are on-going in 2007. The full list of research projects can be found in Annex 9.

The length of the projects varies between 1 to more than 5 years (Figure 19). The actual duration was either short term (1 year or less, especially for Ukrainian projects) or mid-term 3-4 years.



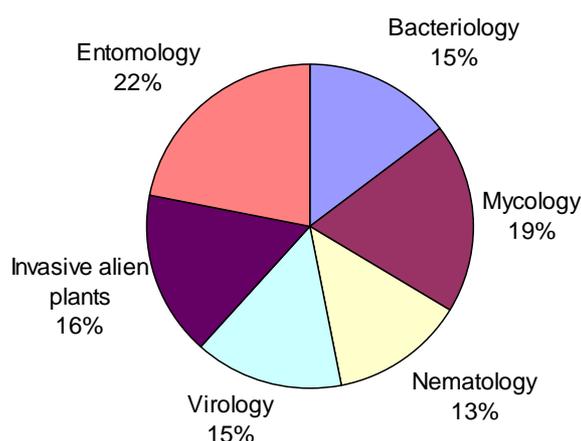
**Figure 19:** Length of national phytosanitary research projects for non-partner countries

Most of the research projects were related to agricultural and horticultural areas (Figure 20). The “environmental” area is more represented in non-partner projects than in EUPHRESKO partners’ projects.



**Figure 20: Breakdown of national phytosanitary research projects according to the objective areas for Non-partners' data**

The research content of the projects was well balanced between all the different types of pest organisms (Figure 21), including invasive plants (this more balanced inclusion of invasive plants contrasted with that by EUPHRESKO partners – cf. Figure 12).



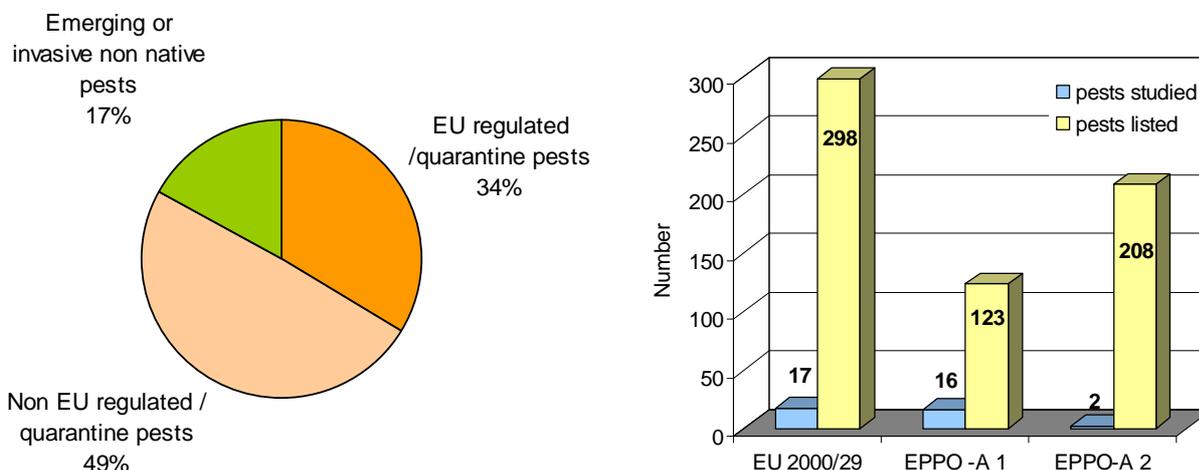
**Figure 21: Breakdown of non-partners' national phytosanitary research projects according to different disciplines**

For non-partner countries that are not EU member states, the notion of quarantine pests may be slightly different, because they would have their own quarantine lists. However, when considering all the pests studied in the non-partner research projects (see list in Annex 11) projects and comparing them to lists of regulated pests (EU plant health directive 2000/29/EC, EPPO lists A1-A2), it appears that few organisms on these list were studied, though they represented 40% of the studied organisms (Figure 22).

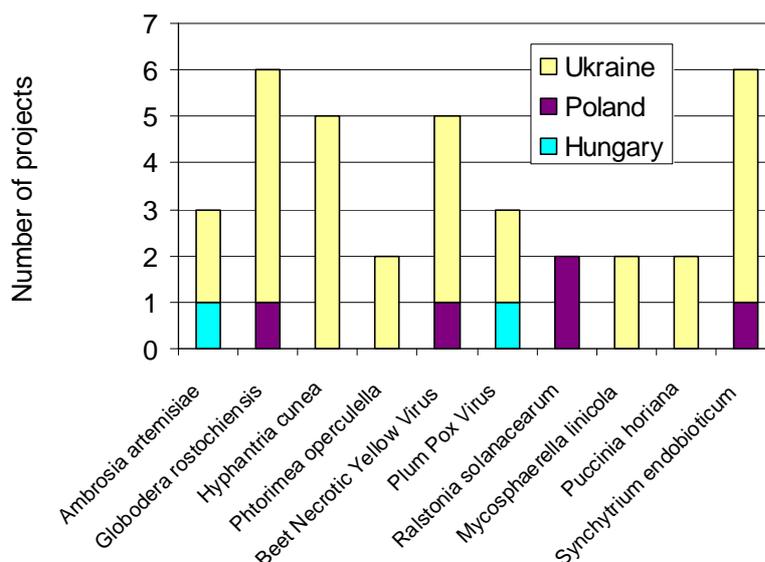
Like partner countries, the percentage of EU quarantine pests studied is the highest for bacteriology and nematology (about 20%), whereas for mycology, entomology or virology this percentage was below 10%.

The pests studied are somewhat different from the EUPHRESKO partner countries. For example, for virology Beet Necrotic Yellow Vein Virus was one the top ten organisms studied

(Figure 23). For mycology, *Synchytrium endobioticum* was the most studied organism. For entomology, *Hyphantria cunea* (5 projects) and *Phtorimea operculella* (2 projects) were the most studied pest, but *Diabrotica virgifera* (2 projects) was also studied. These different top-ten organisms may also reflect the difference in the phytosanitary situation between different regions in Europe. The EUPHRESKO partner countries were much more from the western part of Europe, whereas non-partner were more from the eastern part of Europe.



**Figure 22:** Breakdown of the national phytosanitary research projects according to the regulatory status of the organisms studied, non-partners’ data. A – Proportion of the projects dealing with EU regulated/quarantine pests or regulated non-quarantine pests; B – Number of regulated pests studied in the projects compared to the ones listed in EU Plant Health Directive 2000/29/EC and EPPO A1-A2 lists.



**Figure 23:** Number of projects for the top ten pests per non-partner country

#### **IV. FUTURE RESEARCH PRIORITIES**

Non-partner respondents were also asked to indicate their priorities for future phytosanitary research (raw list in Annex 11). Most of them indicated that “building knowledge” was the main priority. From the responses received, the development of validated diagnostic methods was highlighted, on different organisms, and some of them were EU quarantine pests (e.g. *Diabrotica virgifera*, *Rhagoletis cingulata*). The control/management of pests was also mentioned. Estonia also prioritised Pest Risk Assessment and Pest Risk Management work and the impact of climate change on invasive species development.

## CONCLUSIONS

The responses to the questionnaire resulted in a wealth of information from the different countries, organisations and programmes of phytosanitary research. For EUPHRESKO partners, 26 funders provided information on 35 research programmes, containing about 260 projects. They also provided information on programme management procedures, national and EU phytosanitary research landscapes and indicative priorities for future trans-national research. The information provided allowed an analysis of strengths, weakness and opportunities, which in turn could inform the development of future research strategies for the funding of European phytosanitary research.

### Programme information and content

Generally, the amount of funds in each national programme was relatively small but this resulted in a total figure of approximately 15 MEur for phytosanitary research funding across the EUPHRESKO partners' countries in 2007; this represents almost all the national phytosanitary funds in Europe. Even if some data are lacking the national funding levels generally appear static at best, or are declining in real terms at worst (Figure 7); some of the major national programmes have had significant budget cuts in recent years, though some national programmes have seen increases. However, the relatively small amount of national funding and the lack of pre-existing linkages between national phytosanitary programmes creates an obvious need to increase collaboration, optimise the use of limited resources, reduce duplication and increase the synergistic pooling of resources to achieve optimal outputs. One strength was that most programmes were fairly stable and relatively long-term: most were 4–8 years long (46%) or continuously rolling (43%) programmes (Figure 4); only 11% of programmes were 2–3 years in length.

Most of the national funding (Figure 8) was for very applied research undertaken through relatively small projects (61% of projects were between €10k and €80k). The applied nature of the national programmes is potentially both a strength and a weakness. It should facilitate future collaboration between programmes since there are likely to be common priorities and shared 'applied' goals. EUPHRESKO should be able to better coordinate such applied research to better underpin policy or operations (e.g. inspection activities) and meet immediate policy needs at the European level. Such coordination would reduce the level of duplication, e.g. there were 17 individual potato brown rot or potato ring rot projects, and 14 individual projects on *Phytophthora ramorum*, though the degree of project overlap was not determined (Figure 15). For key pests it was apparent that several national programmes were potentially commissioning similar research and there are therefore opportunities for more efficient use of resources. Conversely, many pests were under studied (Figure 13a) such that only 16% of EC listed pests and only 15% of EPPO listed A1/A2 pests had projects.

The applied nature of the national programmes could potentially make collaboration on more strategic research areas more difficult to progress (i.e. if national programme rationales only accommodate applied research). However, it is perhaps equally likely that trans-national funding collaboration may in fact provide more opportunities for national funds to be used for more strategic research. This would be possible through the pooling of limited resources to fund collaborative, strategic research that could not be funded from individual national programmes with scarce resources. Previously, research that has been more strategic, or of EU-wide impact, has typically had to rely on EU-funding.

Broadly speaking, for EUPHRESKO partners, national funding was well balanced between the key pest groups (Figure 12), though invasive alien species (i.e. invasive alien plants in particular) were

under represented with only 2% of projects dealing with this increasingly important area; this is a potential research gap that might be addressed via EUPHRESKO. Equally, the ‘environmental’ area was somewhat under represented (only 2% of projects dealt with ‘environmental’ pest issues) compared to 80% of projects dealing with ‘agricultural/horticultural’ plant health (Figure 10). Again, this is a potential gap that EUPHRESKO might consider addressing through more collaborative European funding, unless it is already addressed by other programmes from other ministries (environment).

The balance between national funding and EU-funding was fairly typical of most European research areas in that national funding accounted for about 93% of the total funding, i.e. *ca.* €15.7 million of national funding for EUPHRESKO partners in 2006 (plus an estimated €1–2 million from EU non-partners) compared to *ca.* €1.2 Million on average of EU funding per year). There was a tendency for recent EU-funded projects to be more strategic, although pest-specific projects still featured significantly. Since national budgets were relatively small, it was clear that trans-national projects could not in themselves replace the need for EU funding for phytosanitary research. However, EUPHRESKO could play a more strategic role in shaping research priorities at the European level by coordinating its trans-national activities more closely with EU-funded Plant Health research. In this respect, future trans-national EUPHRESKO projects might have the potential advantage of being more responsive to immediate needs; they might also be more applied or pest specific, or perhaps address more regional (e.g. Mediterranean, Baltic, etc) problems. Conversely, EU-funded programmes might perhaps better address more strategic or generic research areas through larger projects which would be high impact at the EU-wide level. The mandate that EUPHRESKO has from the EU Council Working Party of Chief Officers of Plant Health Services (COPHS) to advise on Plant Health research priorities in the EU Framework Programme 7 will help facilitate close coordination of trans-national (via EUPHRESKO) and potential EU-funded research.

### **Management information**

The data collected on management procedures and tools will form the basis for the trans-national instruments (processes and tools) being developed in Workpackage 3, tested in Workpackage 4 through pilot calls in 2008 and then used in future trans-national activities after the end of the EUPHRESKO ERA-Net in 2010. Most of partners used similar application, evaluation and management procedures for research projects. This, together with the instruments/tools that were collated as part of the EUPHRESKO Questionnaire, will help facilitate future EUPHRESKO activities.

The information gathered will also inform the development of future trans-national funding mechanisms (i.e. a Real Common Pot; a Virtual Pot; and a Non-Competitive Mechanism – see Annex 3 *Definitions*). From the Questionnaire responses, it is anticipated that the Virtual Pot will be the main competitive mechanism for future trans-national funding, though 4 countries also expressed an interest in the use of a Real Common Pot since it offers the possibility of procuring the best available science irrespective of national boundaries. The Non-Competitive Mechanism, allowing joint activities to be undertaken through existing or new resources (depending on the country/funder), was also considered a useful mechanism for the phytosanitary research area due to the limited national resources available. Such a Non-Competitive Mechanism would allow a rapid response with minimal administrative burden/cost, for both funders and researcher providers, to address immediate policy questions or emergency needs. The Non-Competitive Mechanism could also address topic areas that are not often considered innovative enough for research programmes to fund directly on their own, e.g. ring testing and validation of diagnostic protocols. Such work is essential to the phytosanitary area and, for example, diagnostic ring testing/validation has consistently been a priority area for EPPO and would benefit from a coordinated European approach.

## **Research Landscape**

215 research providers were identified in the EUPHRESKO partners' countries, together with 98 key non-governmental stakeholders. These collated data will enable future engagement and communication with scientists and stakeholders over research agendas and participation in trans-national collaborative research that will build phytosanitary research capacity in Europe.

An identified strength was that, despite the lack of any pre-existing coordination of national programmes, there was a significant level of research collaboration between scientists, e.g. through EU-funded phytosanitary projects. Trans-national funding will provide an opportunity to further develop and build upon these scientific linkages and enhance European phytosanitary science capacity.

## **Future research collaboration and priorities**

The EUPHRESKO Questionnaire attempted to gauge initial views on future research priorities since trans-national agendas would be developed later in the Project. These common agendas would inform the programme of activities that would be taken forward after the end of the EUPHRESKO ERA-Net in 2010. Although only considered as provisional and early indications of potential research needs, the information gathered did allow an analysis of common areas where national programmes had similar research needs or priorities, as well as helping inform the choice of pilot research topics/calls being implemented through EUPHRESKO in 2008 to 2009/10.

From the information gathered, three main research themes predominated: research supporting pest risk analysis (risk assessment and risk management); research supporting diagnostics (detection and identification methods); research supporting phytosanitary infrastructure and science capability. These, broadly speaking, were also identified in the non-partner responses (Estonia, Hungary, Morocco, Poland, Ukraine), highlighting the potential for other funders outside of the current EUPHRESKO consortium to participate in future joint activities.

A range of specific topic areas also emerged as areas that could be explored for future trans-national collaboration, both from the research priorities responses and from the analysis of existing projects (Figures 10–14). These included (not in any order of importance): seed testing methods; management strategies for difficult to control (eradicate/contain) pests; informatics (research underpinning reference standards, culture collections, etc.); methods for the safe disposal of quarantine waste; invasive alien species (especially, but not exclusively, invasive plants); impacts of climate change on the distribution of pests of plant health concern. Many of these specific research areas reflected those previously identified by the COPHS Working Group on Plant Health Research Priorities for FP7 in February 2006 for the EC's Directorate General for Research.

## **Expected benefits and potential barriers for trans-national activities**

The EUPHRESKO partners considered the following four key benefits as the most important outputs of EUPHRESKO trans-national collaboration (Table 12): building phytosanitary science/research capacity and expertise; optimising the use of funds/resources; establishing long-term European funding collaboration/coordination (i.e. national and EU research programmes); better support for EU Plant Health policy.

The EUPHRESKO partners also identified potential barriers for trans-national phytosanitary research. These included (not in order of importance): financial inflexibility (availability of funds and also impacts of potentially rigid funding cycles for some national programmes); language

(requirements by some countries to have calls/proposals in their national language); the potential ‘heaviness’ of procedures (simple but effective application, evaluation and management procedures would be needed to encourage proposals for relatively small projects and reduce the administrative burden, on contractors and funders alike, whilst maintaining quality). Many of the barriers are anticipated to impact on the type of funding mechanisms that will best suit future trans-national activities. Most national funders were unable to participate in the Real Common Pot mechanism and for their funds to potentially flow to researchers in other countries. However, some partners were still in favour of this mechanism and it will be piloted; other partners might be encouraged to participate via this mechanism in the future if their national rules permit. Generally, most partners favoured either the Virtual Pot mechanism or the Non-Competitive mechanism; with both of these funding mechanisms, funders only pay for the participation of their own researchers in joint activities. The Non-Competitive mechanism has the advantage that it might more efficiently deploy small amounts of funds, with only a minimal administrative burden, to particularly tackle very applied and urgent research issues where key national expertise was known.

In conclusion, this mapping phase of the EUPHRESKO Project has gathered useful information to help facilitate joint activities and trans-national funding. In particular, the information will help develop a coherent phytosanitary research strategy at the EU level that will coordinate national, trans-national and EU-funded phytosanitary research. This will help ensure the best use of limited resources to meet EU Plant Health policy needs, as well as helping to build phytosanitary science capacity and critical mass. Such a strategy will be developed further and implemented via a long-term network of funders with input also from key European stakeholders and policy makers (e.g. EPPO, EFSA, DG SANCO) using the mechanisms and processes developed and tested during the EUPHRESKO Project.

Finally, best practices were also identified from the EUPHRESKO partner’s national research programmes. These will be used to produce guidelines of common principles that might help countries that do not currently have phytosanitary research programmes to establish them.

## **ANNEXES**

**ANNEX 1:** Workpackage 2 – Description of work

**ANNEX 2:** EUPHRESCO questionnaire for partner countries

**ANNEX 3:** Definitions

**ANNEX 4:** Current projects in national phytosanitary programmes of EUPHRESCO partners

**ANNEX 5:** List of studied organisms mentioned in the EUPHRESCO partner countries' research projects

**ANNEX 6:** Inventory of key research providers and non-governmental stakeholders supplied by EUPHRESCO partners

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**ANNEX 1: Workpackage 2 - Description of work**

<b>Workpackage number</b>	2		<b>Start date or starting event:</b>	Month 0									
<b>Activity Type:</b> Coordination Activities													
<b>Workpackage title:</b> Mapping and analysis of existing research and of current needs													
<b>Workpackage Leader:</b> France-DGAL (12)							<b>WP Deputy:</b> Belgium-ILVO (5)						
<b>Participant ID</b>	1	2	3	4	5	6	7	8	9	10	11	12	
<b>Person-months per participant</b>	4	¼	¼	2	3	½	2	2	2	2	2	2	
<b>Participant ID</b>	13	14	15	16	17	18	19	20	21	22	23	24	<b>Total</b>
<b>Person-months per participant</b>	18	¼	4	2	2	2	½	1½	2	2	2	2	60.25

**Objectives**

To systematically gather information on existing phytosanitary (quarantine/statutory plant health) research programmes, including: projects and budgets; existing funding systems and research management processes/practices; research providers; expertise, facilities and other relevant infrastructures and resources; perceived existing needs and priorities at a regional (sub-national), national or zonal level. Also: mapping any pre-existing regional/national/international linkages between research programmes; and identification of national and EU industry bodies, plus key non-EU bodies, for interaction.

To evaluate and analyse the gathered information to identify: overlaps, gaps, duplication, strengths/weaknesses, opportunities and common research priorities; and common instruments and ‘principles’ for best practice.

**Description of work**

This Workpackage aims to gather information on national phytosanitary research programmes and related resources/infrastructures. This sharing of information will foster and encourage a spirit of trust and openness. It will form the basis for future cooperation and collaboration with the eventual aim of establishing a trans-national phytosanitary research agenda based on shared views and priorities that will result in a concrete programme beyond the end of the ERA-Net. Information will also be gathered to determine how programmes are managed: this will result in the development of common instruments in Workpackage 3 to facilitate subsequent trans-national programme funding; the information will also result in a ‘common principles’ Guide to Best Practice that can be used by countries wishing to establish national programmes where none currently exist. A specific task will identify industry bodies at both national and EU levels.

Workpackage 2 will also collate and analyse the information obtained, since mapping and analysis tasks are closely allied and inter-linked. It will draw together information on procedures and best practices which will form the basis of the instruments for facilitating trans-national activities developed in Workpackage 3. It will also analyse data of national programmes and projects to identify gaps, overlaps, duplication, strengths/weaknesses, and opportunities; this analysis will form the basis for developing the strategic programme in Workpackage 5 and will also inform the choice of pilot projects in Workpackage 4.

Specific tasks in this Workpackage will involve:

**2.1 Define specific information to be gathered/mapped** (including a half-day workshop at the

kick-off meeting in Month 2). This is likely to include (partner 12/13 with 1; plus All):

- *Programme information* (budgets, projects, funding mechanisms/approaches, time (and willingness) to release funds, and potential barriers to trans-national collaboration)
- *Management procedures* (procurement routes, proposals/applications, evaluations, contract types, monitoring approaches, reports, intellectual property). Common management procedures and best practices established in related ERA-Nets, or at other trans-national levels (e.g. EU level) will also be collected.
- *Inventory of existing needs/gaps/infrastructures/resources* (national/regional research resources, needs and priorities; mechanisms for establishing national research needs; lists of research providers (e.g. government, university, commercial) and their skills/expertise, facilities and other infrastructures/resources; lists of potential funding bodies for Statutory Plant Health research, both government and industry).
- *Existing linkages and collaboration*: map and analyse any pre-existing collaboration and coordination at the regional/national European levels and international levels.
- *Appropriate industry representatives and Non-EU bodies*: including both industry funding bodies (e.g. grower levy groups) and industry representatives (All partners); selected NPPO's and RPPOs (partner 1 & 15).

**2.2 Prepare for data collection and collect data/information:** including the following sub-tasks:

- Plan matrices needed for data collation and analysis, and provide input into database design (partner 12/13 with 1; plus All).
- Plan data base structure and data fields, accounting for long-term network needs, internet-based entry and matrices needed for data collation and analysis (partner 1 & 12/13; plus All).
- Build/construct database (partner 1); then pilot the database amongst selected partners (e.g. at least partners 1/2, 5/6, 12/13, 14/15, 19/20) and refine it (workshop/meeting in Month 6 to finalise database fields/questionnaire: All partners).
- Link final database to the website to enable internet-based data entry and access by WP2 participants (partner 1 & 12/13).
- Identify European countries (including, as appropriate, Euro-Med countries), or devolved regions within countries, which have Phytosanitary Research Programmes and their respective programme managers (partner 12 and All other partners).
- Each partner country to collect and enter their own regional/national data onto database, ensuring both agricultural/horticultural and forestry-related data is obtained.
- Request internet-based data input from other (non-partner) European (and non-European EPPO countries, as appropriate), plus selected non-EU countries as appropriate (partner 12/13 with 1).
- Continued low level updates of information annually (partner 12/13 with 1; plus All).

**2.3 Analysis of information:**

This will be done both at the Europe-wide level and also for specific European zones (e.g. southern zone, eastern zone, northern zone, western Europe) as appropriate to account for zonal European differences (e.g. due to differences in crops, climate and priority quarantine pest issues).

- Collate and analyse information on national *Programme information* (partner 12/13), including budgets, projects, funding mechanisms/approaches, time to release funds (identify funds and funders that could participate in pilot projects in WP4), and potential barriers to trans-national collaboration. Identify overlaps, gaps, duplication, strengths/weaknesses and barriers.
- Collate and analyse information on *Management procedures* (partner 12/13; plus 9, 19, 20), such as procurement routes, proposal and evaluation processes, contract types, and monitoring and reporting approaches in order to develop common instruments that represent best practice. These instruments will be developed in WP3 for use in collaborative activities; common principles will also be identified and a general guide to these produced for use by countries wanting to set up their own national Phytosanitary research programmes. Instruments and best practices developed

in related ERA-Nets will also be obtained, collated and analysed.

- Collate and analyse information obtained from the *Inventory of existing needs/gaps/infrastructures/resources* to identify key areas for cooperation, collaboration and coordination (regional/national/zonal research needs, priorities, gaps and opportunities; lists of research providers and their skills/expertise, plus other relevant plant health research-related infrastructures/resources). (partner 12/13; plus All)
- Collate and analyse information relating to industry and Non-EU bodies (partner 12/13; plus All).

#### **2.4 Produce reports and publish information on national phytosanitary research programmes:**

- Publish the collated information on the external Project website so that national programme managers and other interested parties can see the national picture. This will be updated on a yearly basis (partner 12/13 & 1).
- Produce a report on the final analysis for submission to the Governing Board (partner 12/13; plus All), including recommendations for the development of: common instruments/processes that need to be developed in WP3 to facilitate trans-national activities; shared priorities and a common research agenda; potential topics for pilot projects in WP4.
- Produce a guide outlining ‘common principles’ (partner 12/13; plus All) for setting up national phytosanitary research programmes where none exists.

#### **Deliverables**

- DL 2.1 Final database established/operational and linked to project website (Month 6)
- DL 2.2 Report on the mapped and analysed data and information from national programmes, etc. (Month 17)
- DL 2.3 Published information on national programmes on website (Month 18)
- DL 2.4 ‘Common principles’ guide to establishing national programmes for use by countries who currently have no phytosanitary research programme, etc. (Month 18)

#### **Milestones and expected result**

- MS 2.1 Prototype database constructed for testing amongst partners (Month 3)
- MS 2.2 National programme managers outside of the consortium identified (Month 6)
- MS 2.3 Plan matrices for collating and analysing information from national programmes etc. (Month 8)
- MS 2.4 Data entered on database for partner countries (Month 9)
- MS 2.5 Data entered on database for additional countries not directly participating (Month 11)
- MS 2.6 Collation and analysis of management procedures, identifying common instruments for WP3 (Month 12).
- MS 2.7 Information for identifying potential funders of WP4 pilot projects obtained (Month 12).
- MS 2.8 Collation & analysis of Programme information, related infrastructure/resources, priorities & existing linkages (Month 16).
- MS 2.9 Report on the mapped and analysed data and information from national programmes etc. (Month 17)

## **ANNEX 2: EUPHRESKO questionnaire for partner countries**

This questionnaire was filled in by all the members of the consortium in March-April 2007

### **I Information on public bodies who fund and/or manage phytosanitary research in your own country:**

#### **1. Name of the body:**

Acronym:

Full Name:

Translation in English:

#### **2. Person completing the questionnaire: Name:**

Telephone:

Email:

#### **3. Address of the person completing the questionnaire: Address:**

City:

Post Code:

Country:

#### **4. Financing and managing programmes: Are you a Ministry with full responsibility for financing research activities carried out at national or regional level for the programme?**

#### **5. Financing and managing programmes: Are you a Ministry with full responsibility for managing research activities carried out at national or regional level for the programme?**

#### **6. Financing and managing programmes: Are you a national or regional organisation/public body that finances research activities, e.g. agencies funding research on behalf of a ministry?**

Who is the organisation mandating research?

Supervisor title?

Supervisor name?

Name translation in English?

Role of supervisor? Financial provider Thematic Research

Programme Management Other: Explain

#### **7. Financing and managing programmes : Are you a national or regional organisation/public body that manages research activities, e.g. agencies managing research on behalf of a ministry?**

Who is the organisation mandating research?

Supervisor title?

Supervisor name?

Name translation in English?

Role of supervisor? Financial provider Thematic Research

Programme Management Other: Explain

#### **8. Name of the ongoing funded phytosanitary programme(s):**

(If no name, please find an identification)

#### **9. Any comments or additional information to clarify about questions 1 to 8 if needed:**

## II. Information on your own current phytosanitary programme:

### 1. Name of the main funder (institution providing funds):

Funder Name:

Is the Programme joint-funded with other funders (this refers to the Programme, not co-funding of some Projects within a Programme):

name of the co-funding institution/agency:

Country:

Comments if needed:

### 2. Name of the programme manager:

Contact Name:

Contact E-Mail:

Contact Address:

### 3. Programme Details: It is a national/regional phytosanitary programme (choose)

### 4. Programme Details: It is a discrete phytosanitary programme part of a larger general programme

Overall budget of the larger general programme? in Euros

How much (in %) of the overall budget does the phytosanitary part represent?

### 5. Budget of the phytosanitary research programme for the current annual cycle in Euros?

Full cost, including salaries and taxes. in 2007

When does your budget/financial year start? in 2007

What is your minimum time it would take to make funds available for future trans-national activities (in weeks)?

Comments if needed:

### 6. Budget of the phytosanitary research programme for the previous & next annual cycle in Euros? Full cost, including salaries and taxes in next year (2008)

In Euros? in previous year (2006)

Comments if needed:

### 7. Period/duration of the programme Total duration in months:

Start year (yyyy):

End year (yyyy): enter 0 for ongoing

Comments if needed:

### 8. What is the balance of funds between competitive and non-competitive research?

Comments if needed:

### 9. What is the research balance of the programme? (type of research in % of the total budget) % basic/fundamental research?

% applied research/experimental development?

Any Comments?

### 10. Please provide your programme objectives?

Attach a document?

**11. Has the programme officially been published? yes/no?**

where/web link?

File of publication?

Comments if needed:

**12. What are the linkages of your phytosanitary programme to other non-phytosanitary disciplines?**

(socio-economics, environmental impact, modelling)

**13. Does the programme involve collaboration with other phytosanitary programme(s) in your country? Yes/no:**

**14. Does the programme involve collaboration with other phytosanitary programme(s) in other country(s)? Yes/no**

Comments if needed:

**15. Detailed information about the programme:** describe the current projects within the programme

**16. How much of the results of the research are publicly available?**

Are there any confidentiality issues:

Comments if needed:

**17. Are there any centralised facilities or services that support the programme? Yes/no**

Please provide comments, including any web links:

**18. What is the policy concerning the intellectual property?**

**19. Any additional comments or further information for part II?**

### III – Information on your own current phytosanitary programme

#### III.2. Management procedures

##### III.2.1 Project initiation

1 – **Timescales:** specify the timescales according to the different procurement routes for projects (Tick when relevant)

Procurement route	Expected total timescales	
Open competitions	Time from first call till contract preparation	0-4 months (tick) 4-8 months 8-12 months more than 12 months
Expression of interest (Eoi) then limited competition	Time from Eoi till contract preparation	0-4 months 4-8 months 8-12 months more than 12 months
Limited competition	Time from call till contract preparation	0-4 months 4-8 months 8-12 months more than 12 months
Single tender (non-competitive)	Time from project definition till start of the project	0-4 months 4-8 months 8-12 months more than 12 months
Any other comment concerning the timescales	Fill blank space	

2 – **How would you classify the character of the design process of the projects?**

Select an option :

- 0% top down (100% bottom up)
- 1-20% top down (80-99% bottom up)
- 21-40% top down (60-79% bottom up)
- 41-60% top down (40-59% bottom up)
- 61-80% top down (20-39% bottom up)
- 81-99% top down (1-19% bottom up)
- 100% top down (0% bottom up)
- comments (blank space)

3 – **Do you have legal issues to publicise calls?** yes/no

if yes, explain (blank space)

4 – **Do you envisage any barriers / difficulties concerning programme initiation to implement Euphresco transnational activities?** Yes / no

if yes, explain (blank space)

5 – **Any comments** (blank space).

### III.2.2 Application / proposal procedures

1 – Please upload examples of your application forms (attach files)

2 – Is this programme a continuously open call for competitive research ? Yes/no  
any comments (blank space to fill)

3- Who can compete in your programme ?

(tick as much as needed)      Universities  
Government /government agency laboratories  
Non governmental public bodies (e.g research council institute)  
Private companies/institutes/small businesses  
Local/regional public administrative bodies  
Institutions from foreign countries  
Other : explain (blank space)

4 – What elements need to be addressed in a proposal ? (Tick the appropriate answers)

general points / introduction  
objectives  
relevance  
state of the art / preliminary work  
qualification of the consortium  
description of work  
time plan/milestones  
cost plan, available and requested resources  
management plan  
training and education  
ethics  
appendices  
other : explain (blank space)

5 – What proposal submission system is used ?

electronic system (=sending by e-mail/website submission) : yes / no / optional / obligatory  
if no, could electronic submission of proposals be a barrier ? yes/ no  
paper version : yes / no / optional / obligatory  
most common way of submission : electronic / paper

6 – Do you envisage any barriers in application procedures for future trans-national activities?

Yes / no                      if yes, which ones (blank space to fill)

7 – Any comments (blank space)

### III.2.3 Evaluation process of the proposals

1 – If there is competitive research in the programme, please describe the evaluation process of the proposals (in particular the role of the evaluators, peer reviewers, who they are and how the final decision is made) (blank space)

1.1 Which people are involved in the evaluation process (possibility to tick several times)

The funding body  
Government ministry / Policy customer, if, not the funding body  
Industry bodies / representatives (grower/trade associations or unions)  
Independent expert scientists/reviewers  
Other: explain  
Any comments

1.2 Who makes the final decision on commissioning projects?

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**2– If there is non-competitive research in the programme, please describe the evaluation process of the proposals (in particular the role of the evaluators, peer reviewers, who they are and how the final decision is made)** (blank space)

Please provide any useful weblinks and / or attach file for evaluations forms & evaluation tools in English.

**2.1 Which stakeholders are represented among evaluators?** (possibility to tick several times)

the funding body  
government ministry/policy customer, if not the funding body  
industry bodies/representatives (grower/trade associations or unions)  
independent expert scientists/reviewers  
other : explain  
any comments

2.2 Who makes the final decision on commissioning projects?

**3 – Have all evaluators/peer reviewers to come from your country?** Yes/no

if yes, could it be a barrier for future trans-national activities? Yes/no

(blank space to comment)

**4 – Are there any evaluation guidelines provided by the evaluators?** Yes/no

if yes, which ones? Weblink or attach file in English

**5 – Materials the evaluators are provided with** (full proposals, CV...) fill blank space

**6 – What are the evaluation criteria applied for the evaluation process?**

(tick several times if needed)

expertise of applicant/consortium  
scientific quality of the proposal  
relevance to the programme / to the project  
innovative potential, novelty, originality of proposal  
project/resource management  
value for money  
multidisciplinarity  
ethical/safety issues  
gender balance  
quality/capacity of the host (relevance to infrastructure)  
feasibility of the research  
involvement of “special” people (young scientists, given institute)  
clarity  
other : explain (blank space)  
any comments : fill blank space

**7 – In the trans-national activities of Euphresco, would you have a preference for any particular evaluation procedure?** (blank space to fill)

**8 – Do you envisage any barriers for evaluation of the proposals for future trans national activities?**

(blank space to fill)

**9 – Any comments** (blank space)

### III.2.4 Contracts section

**1 – Please attach examples of research contracts, labelling the files appropriately**

1.1 – Are the contracts in English?

1.2 - If not, please list the sections that appear in the contracts in English

- 2 – **Do you have any barriers in these contracts that might affect future trans-national activities?** (blank space)
- 3 **Any comments or additional information for Part III.4?** (blank space)

### III.2.5 Project management-control-monitoring

- 1 – **Please describe how projects are controlled and monitored (management organisation, scientific advisory boards, evaluation committees)**

attach templates of annual/final reports, appraisal forms to evaluate reports if available and if in English.

- 2 – **Do you envisage any barriers related to management/monitoring that may affect future trans-national activities/projects?** (blank space)

- 3 – **Any comments or additional information** (blank space)

## IV. National research landscape

### 1. Inventory of the research providers involved in phytosanitary research

#### Add new provider

Research Provider    Web Link    Contact person

Any Comments:

### 2. Inventory of non-governmental stakeholders (main representative industry bodies, excluding agro-chemical companies)

Stakeholders    Web Link    Contact person

Any Comments:

### 3. According to you, what are the potential expected benefits of collaboration? (Tick several times if necessary)

- Facilitate long term collaboration between European funders
- Greater international interaction with non-EU plant health bodies
- Optimisation of national programme funds (e.g. through avoiding duplication)
- Building national research capacity and expertise
- To enable the adoption of best operational practices for research management
- Sharing information on national phytosanitary research programme
- Better support for policy
- Other : explain

Any comments : (blank space)

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**ANNEX 3 : Definitions**

Many of the relevant phytosanitary definitions are set out by the FAO in the International Standard for Phytosanitary Measures, No.5 (ISPM No.5), 2006. For the purposes of this questionnaire, terms are defined as follows:

- Competitive/non –competitive procurement mechanisms
  - Competitive: process in which several research providers present proposals on a given theme to get funds. These proposals are evaluated and selected, the highest quality/cost ratio ones get the funds
  - Non-competitive: There is no competition for the funds to carry out the research; either because the research provider uses freely its own funds or because the funder decides to work with only preferred research providers.
- 'Phytosanitary measure': Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests (ISPM, No.5).
- Phytosanitary research projects or programmes therefore deal with regulated quarantine pests, emerging pests with the potential to become quarantine pests (organisms new to countries, outbreaks in other countries, non-native invasive species relevant for, or associated with, plants) and regulated non-quarantine pests (RNQP) in particular countries.
- 'Plant': living plants and parts thereof, including seeds. It shall also include alien plants. All projects and research in the fields agriculture, horticulture and forestry, as well as plants in the environment, dealing with plant pests of phytosanitary concern are relevant in the scope of EUPHRESCO. (ISPM, No.5).
- 'Plant pest': any species, strain, biotype of plant, animal or pathogenic agent injurious to plants or plant products (ISPM, No.5) It therefore includes: bacteria, fungi, viruses, nematodes, invertebrate pests, weeds, etc., that are injurious to plants or plant products.
- 'Plant products': Unmanufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the introduction and spread of pests (ISPM, No.5). Wood is included (e.g.: research conducted on post-harvest treatments for wood and wood products needed for phytosanitary purpose).
- 'Quarantine pest'(QP) : a pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (ISPM, No.5).
- 'Regulated pest': a quarantine pest or a regulated non-quarantine pest (ISPM No.5).
- 'Regulated non-quarantine pest' (RNQP) A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party (ISPM No.5).
- Research includes basic and applied research and experimental development as defined by the OECD (OECD Frascati manual, 2002). Activities excluded from the definition of research are also defined by the Frascati manual (pages 30–46)

- Basic/fundamental research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view. E.g.: sequencing genome *Ralstonia*, PCR based collection
- Applied research is also original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective. E.g.: new detection techniques for *Ralstonia* typing for pathotypes, using database to target specific pathotypes, PRA: development of decision support system.
- Experimental development is systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed. E.g.: ring testing, validation of testing methods.

For EUPHRESKO, research should be phytosanitary-related (related to regulated or emerging pests).

- 'Research programme': a grouping of research projects or activities with a common funding and steering mechanism
  - discrete phytosanitary programme : it includes several projects focussed only on phytosanitary research
  - larger "agricultural/agronomic/environmental" programme : the programme has a number of phytosanitary projects within a larger more general programme subject..
  - For a regional programme, the term 'region' should be understood as an area inside a country (e.g. : Basque country, Flanders, Bavaria, ...) It should not be understood as a supra-national area.
- 'Research project' : a funded unit within or outside a research programme which has defined goals, objectives and timeframe.
- The pests under consideration can therefore be:
  - under EC regulation (e.g. EC Plant Health Directive 2000/29/EC) or emergency EC measures.
  - under national regulation (e.g. RNQPs): see International Standard for Phytosanitary Measures (ISPM) No. 16, edited by the FAO (ISPM No.16), the pests considered in the national certification schemes are also included in EUPHRESKO
  - emerging non-native pests with the potential to become quarantine pests,
  - Invasive non-native species relevant to plants are also included.
  - GMO's and common, widely distributed plant pests are excluded.
- Research relevant for EUPHRESKO could include:
  - The development and the validation of survey, monitoring or diagnostic methods for regulated or emerging pests.
  - The development and validation of control/management approaches for regulated or emerging pests.
  - Research in support of developing Pest risk Analysis (PRA) Science or PRAs for specific pests (including aspects of pest risk assessment and pest risk management)
  - Research on socio-economic aspects relevant to Plant Health.
  - Research commissioned by EU countries (or Associated States or Associated Candidate Countries) in third countries which benefits the EU, e.g. in

contributing to the exclusion of quarantine or potential quarantine pests from the EU, to maintain and improve the commercial relationships between countries.

- Activities NOT included in the definition of research include:
  - Import inspections and in-land surveillance/monitoring activities for regulated pests (e.g. to meet EC Directive requirements), unless they are specifically part of a research activity.
  
- For transnational activities, three main mechanisms are anticipated (they will be detailed later in EUPHRESKO by Workpackage 3 (February-November 2007)).
  - Real common pot for a joint call: each country provides funds into a real ‘pot’ in a single bank account; the best projects resulting from an open call are funded regardless of the nationality of the researchers involved. There is therefore a transnational flow of funds. Proposals compete.
  - Virtual common pot for a joint call: each country pays only for the involvement of its own researchers in projects resulting from an open common call. This mechanism too is competitive, like for the real common pot. Each country commits to providing funds to a virtual pot through a Memorandum of Understanding. This is, like for the real common pot, a competitive mechanism. Once the best projects are chosen, the national funder simply meets the costs of its own researchers through its normal contracting procedures. There is no competition between countries but only between research groups within a country there is no transnational flow of funds.
  - Non-competitive consortiums: a science/research problem or topic area is divided between research groups (preferred research suppliers), organised in a consortium, in different countries according to their expertise; each country pays its own researchers to deliver work to the consortium; results are pooled together by mutual agreement. It is anticipated that such projects would be non-competitive. There is no trans-national flow; there is no competition.



**ANNEX 4: Current projects in national phytosanitary programmes of EUPHRESCO partners (NB: budgets are given for whole duration of the project)**

Country	Short name	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines	Budget
Austria	BMLFUW	Studies on the importance, geographical distribution and epidemiology of phytoplasmic diseases in Austrian viticulture	09/01/2004	06/01/2007	Agricultural/horticultural related	Hyalesthes obsoletus, Flavescence dorée	Phytoplasmas	118894
Austria	BMLFUW	Testing of pear trees on their own roots in comparison with important used rootstocks with special regard to the tolerance to fire blight (Erwinia amylovora)	09/01/2004	12/01/2008	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	84891
Austria	BMLFUW	Stolbur on vine, Formulation of regulation strategies and assessment of economic impacts for wingrowers concerned	01/01/2005	12/01/2007		Stolbur	Phytoplasmas	2128
Austria	BMLFUW	POMEFRUITHEALTH, Clarification of fire blight resistance and development of resistance markers	08/01/2006	07/01/2009	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	351480
Austria	BMLFUW	ERDBEERSTRATEGIEN, Novel strategies for resolving horticultural problems caused by soil-borne pathogens exemplified on strawberry crop	07/01/2006	06/01/2009	Agricultural/horticultural related	Verticillium	Mycology	141100
Austria	BMLFUW	FIREBLIGHTSUSCEPTIBILITY, Studies of Selected Parameters in Terms of the Improvement of the Prevention and Control of Fire Blight	09/01/2006	08/01/2008	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	121334
Austria	BMLFUW	Phytoplasmas of the Stolbur group on vine - ethological investigations into potential vectors of phytoplasmas	01/01/2005	12/01/2007	Agricultural/horticultural related	Stolbur	Phytoplasmas	25299
Austria	AGES	Investigations on the tolerance of specific quince varieties towards fireblight (Erwinia amylovora)	01/01/2007	12/01/2009	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	45180
Austria	AGES	Development of statistic based sampling plans for the detection of latent fireblight (Erwinia amylovora)	01/01/2007	04/01/2009	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	63950
Austria	AGES					Biostatistics		
Austria	AGES	Pheromones instead of neurotoxic compounds - Innovative protection from the billion dollar beetle (Diabrotica virgifera virgifera)	01/01/2007	12/01/2007	Agricultural/horticultural related	Diabrotica virgifera virgifera	Entomology	8037
Austria	AGES	Studies on the importance, geographical distribution and epidemiology of phytoplasmic diseases in Austrian viticulture.	09/01/2004	06/01/2007	Agricultural/horticultural related	stolbur	Phytoplasmas	5060
Austria	AGES					Entomology		
Austria	AGES					Nematology		
Austria	AGES					Bacteriology		
Austria	AGES					Mycology		
Austria	AGES					Phytoplasmas		
Austria	AGES					Virology		
Austria	AGES					Invasive alien plants		
Austria	AGES	FIREBLIGHTSUSCEPTIBILITY, Studies of selected parameters in terms of the improvement of the prevention and control of Fire Blight	09/01/2006	08/01/2008	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	62218
Austria	AGES						Bacteriology	4336
Austria	AGES	POMEFRUITHEALTH, Aufklärung der Feuerbrandresistenz und Entwicklung von Resistenzmarkern	08/01/2006	07/01/2009	Agricultural/horticultural related	Erwinia amylovora	molecular biology and biochemistry and plant physiology	
Austria	AGES	Testing of pear trees on their own roots in comparison with important used rootstocks with special regard to the tolerance to fire blight (Erwinia amylovora)	09/01/2004	12/01/2008	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	1747
Belgium	ILVO	Phytophthora ramorum in rododendron and forestry	08/01/2005	01/01/2010	Agricultural/horticultural related	Phytophthora ramorum	Mycology	38000

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Belgium	ILVO	Puccinia horiana on chrysanthemum	01/01/2003	07/01/2011	Agricultural/horticultural related	Puccinia horiana	Mycology	5240
Belgium	ILVO	Colletotrichum acutatum on strawberry	09/01/2006	08/01/2010	Agricultural/horticultural related	Colletotrichum acutatum	Mycology	13420
Belgium	ILVO	Xanthomonas fragariae: typing and relationship with strawberry.	01/01/2006	12/01/2009	Agricultural/horticultural related	Xanthomonas fragariae	Bacteriology	10000
Belgium	ILVO	Ecology of ringrot and brown rot on potato	01/01/2000	12/01/2010	Agricultural/horticultural related	Ralstonia solanacearum and clavibacter mich. sepedonicus	Bacteriology	10660
Belgium	ILVO	The root-knot nematodes, Meloidogyne chitwoodi and M. fallax in field grown vegetables.	01/01/2004	12/01/2008	Agricultural/horticultural related	Meloidogyne chitwoodi and M. fallax	Nematology	920
Belgium	ILVO	Pest risk analysis of harmful organisms in plant production	01/01/2007	12/01/2008	Agricultural/horticultural related		Nematology	7620
Belgium	ILVO						Bacteriology	
Belgium	ILVO						Mycology	
Belgium	ILVO						Entomology	
Belgium	ILVO						Nematology	
Belgium	ILVO						Bacteriology	
Belgium	ILVO						Mycology	45750
Belgium	ILVO	To study in depth the knowledges about cerato platanine role in stained cancer pathogenesis	01/01/2005	01/01/2007	Agricultural/horticultural related		Bacteriology - Mycology?	9500
Belgium	ILVO	To study molecular bases of interaction between some non catalytic fungin proteins (hydrofobina, elicitor, cerato platanine) and host plant for understanding the specific biochemical mechanism by means of the proteins exerted their action	01/01/2005	01/01/2007	Agricultural/horticultural related		Bacteriology - Mycology?	10500
Belgium	ILVO	To analyze the variations of platan genic expression caused by cerato platanine, the protein produced by "Ceratomyces fimbriata" f. sp. "platan" that is the agent of platan stained cancer	01/01/2005	01/01/2007	Agricultural/horticultural related	Ceratomyces fimbriata	Bacteriology - Mycology?	9500
Belgium	FPS	Pest risk analysis voor pests in the plant sector	11/01/2007	10/01/2009	Agricultural/horticultural related	Dendrolimus sibiricus, Heterobostrychus hamatipennis, Scrobipalposis (tecia)	Entomology	300000
Belgium							Nematology	
Belgium							Virology	
Belgium							Invasive alien plants	
Belgium	FPS	Alternatives for methylbromide in lettuce culture	01/08/2005	01/07/2009	Environmental related			418800
Belgium	FPS	Phytophthora ramorum	01/10/2005	01/09/2009	Agricultural/horticultural related	Phytophthora ramorum	Mycology	548654
Bulgaria	NSSP	Insects from order Homoptera and Thysanoptera as pests and virus vectors on vegetables, ornamentals	12/01/2006	12/01/2007	Agricultural/horticultural related	Myzus nicotinae, Myzus persicae, Thrips tabaci	Entomology	54000
Bulgaria	NSSP	Pest risk analysis of quarantine pests in Bulgaria	12/01/2006	12/01/2007		Grapevine flavescence doree phytoplasma; Pear decline phytoplasma, Tomato ringspot virus,	Virology	104000
Bulgaria	NSSP						Nematology	
Bulgaria	NSSP						Bacteriology	
Bulgaria	NSSP						Virology	
Bulgaria	NSSP	Weed control optimization, Weed mapping and risk assessment for development of weed resistance.	12/01/2006	12/01/2008	Agricultural/horticultural related	Ambrosia spp., Iva spp	Invasive alien plants	123000
Danemark	DK potato	Enhanced control of Potato mop-top virus in the Nordic and Baltic Sea region	01/01/2005	12/01/2008	Agricultural/horticultural related		Virology	1458000
Danemark	DK food techn	DNA-chip for monitoring fungi in cereals	01/01/2002	12/01/2007	Agricultural/horticultural related		Mycology	552000
Danemark	DK food research	Sensor systems for improved monitoring of microorganisms in food production	01/01/2007	12/01/2010	Agricultural/horticultural related		Bacteriology	681477
Danemark							Mycology	
Finland	COMP	DNA chip in the research and diagnostics of					Bacteriology	75000

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Finland	COMP	bacterial diseases	01/01/2007	12/01/2009		potato viruses and bacteria	Virology	
Finland	COMP	Enhanced control of Potato Mop-Top Virus in the Nordic and Baltic Sea region	01/01/2005	12/01/2008		Potato mop-top virus	Virology	400000
Finland	COMP	Plant protection in direct drilling - need and solutions	01/01/2005	12/01/2008	Agricultural/horticultural related		Entomology	90000
Finland	COMP						Nematology	
Finland	COMP						Bacteriology	
Finland	COMP						Mycology	
Finland	COMP						Phytoplasmas	
Finland	COMP						Virology	
Finland	COMP	Biocontrol of plant diseases by endophytic bacteria	01/01/2005	12/01/2008			Bacteriology	90000
Finland	COMP	Genomic analyses and modeling of plant secondary metabolism for development of oilseed rape with improved pest resistance	01/01/2006	12/01/2009	Agricultural/horticultural related		Mycology	160000
Finland	COMP	Adaptation of Finnish agrifood sector to climate change	01/01/2006	12/01/2009			Invasive alien plants	327000
Finland	Metla	Functioning of forest ecosystems and use of forest resources in changing climate	01/01/2007	12/01/2011	Forestry related	Sphaeropsis sapinea, Mycosphaerella dearnessii, Gremmeniella abietina, heterobasidium parviporum, Lophodermium seditiosum, Loph	Mycology	146500
Finland	Metla	Evaluation of future risks of alien species and old pathogens on new hosts	01/01/2007	12/01/2011	Forestry related	Phytophthora ramorum, Phytophthora inflata, Cronartium flaccidum, Phacidium infestans, Gremmeniella abietina	Mycology	96500
Finland	Metla						Entomology	82300
Finland	Metla						Nematology	
Finland	Metla	METINFO	01/01/2007	12/01/2999	Forestry related	All pathogens and pests	Mycology	
Finland	MTT	Climate change/PRA	10/01/2006	12/01/2009				20000
Finland	MTT	BD and alien species	01/01/2006	12/01/2009				50000
Finland	Petta	Plant protection studies on potato	01/01/1994	12/01/2009	Agricultural/horticultural related	Phytophthora infestans, Rhizoctonia solani, Erwinia carotovora	Entomology	173000
Finland							Nematology	
Finland							Bacteriology	
Finland							Mycology	
Finland							Virology	
Finland								
Finland	Akatemia	Molecular mechanisms of the plant-potyvirus interactions	08/01/2006	12/01/2009	Agricultural/horticultural related		Virology	526890
Finland	Akatemia	Functional and inhibitory protein-protein and protein-RNA complexes of potyvirus infection	01/01/2007	12/01/2010			Virology	354400
Finland		New strategies for plant resistance to plant pathogens	08/01/2005	12/01/2008				168090
Finland	Akatemia	Effect of physiological factors on the enlargement of the area of spread of Colorado Potato Beetle ( <i>Leptinotarsa decemlineata</i> )	08/01/2005	12/01/2007		Colorado Potato Beetle ( <i>Leptinotarsa decemlineata</i> )	Entomology	104060
France	DGAI	PRA realisation on <i>Colletotrichum acutatum</i>	10/01/2006	06/01/2007	Expertise related	<i>Colletotrichum acutatum</i>	Mycology	2500
France	DGAI	Assessment of the Climex software	03/01/2007	03/01/2008	Expertise related		Entomology	6000
France	DGAI						Nematology	
France	DGAI						Bacteriology	
France	DGAI						Mycology	
France	DGAI						Phytoplasmas	
France	DGAI						Virology	

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France	DGAI						Entomology	23000
France	DGAI						Nematology	
France	DGAI						Bacteriology	
France	DGAI						Mycology	
France	DGAI						Phytoplasmas	
France	DGAI						Virology	
France	DGAI	PRA methodology	01/01/2007	12/01/2007	Expertise related		invasive alien species	
France	DGAI						Entomology	70000
France	DGAI						Nematology	
France	DGAI						Bacteriology	
France	DGAI						Mycology	
France	DGAI						Phytoplasmas	
France	DGAI						Virology	
France	DGAI	PRA production	01/01/2007	12/01/2007	Expertise related		Invasive alien species	
France	DGAI	Colletotrichum acutatum and Phytophthora spp collections	01/01/2007	12/01/2007	Expertise related	Colletotrichum acutatum and Phytophthora spp	Mycology	25750
France	DGAI	Validation of methods of detection by ring testing	01/01/2007	12/01/2007	Expertise related	Plasmopara halstedii, Phytophthora	Nematology	78100
France	DGAI					Mycology		
France	DGAI	Development of detection and identification methods	01/01/2007	12/01/2007	Agricultural/horticultural related	Globodera, Meloidogyne, Bursaphelenchus, Heterodera	Nematology	201309
France	DGAI					Bacteriology		
France	DGAI	Computerization and Photography of collections	01/01/2007	12/01/2007	Expertise related	Aleurocanthus spp and lepidopteran	Mycology	
France	DGAI	Development of a reference collection on quarantaine insects	01/01/2007	12/01/2007	Expertise related	quarantaine insects and mites	Entomology	29225
France	DGAI	Development of a molecular database : bar code project	01/01/2007	12/01/2007	Expertise related		Entomology	6565
France	DGAI	Inventory of insects from overseas territories	01/01/2007	12/01/2007	Expertise related	Sternorrhyncha Aleyrodidae, Coccoidea , Thysanoptera	Entomology	10135
France	DGAI						Entomology	7135
France	INRA	Biology of the transmission by scale insects (coccids & pseudococcids) of grapevine leafroll	09/01/2004	08/01/2007	Agricultural/horticultural related	Grapevine leafroll associated viruses	Entomology	90000
France	INRA	Multi-scale study of the genetic structure of populations of Scaphoides titanus and evolution of identifying the spatial scale of the interactions between orchards and surrounding non-cultivated areas in the epidemiology of the European Stone Fruit Yellows phytoplasma	09/01/2004	09/01/2007	Agricultural/horticultural related	Grapevine flavescence dorée phytoplasma	Virology	90000
France	INRA					Entomology		
France	INRA	Comparative genomics of Ralstonia solanacearum : structure and evolution of the genome and of pathogenicity factors	09/01/2005	08/01/2008	Agricultural/horticultural related	European stone fruit yellows phytoplasma	Phytoplasmas	30000
France	INRA	Tracing the introductions and invasions of Diabrotica virgifera through population genetics of this invasive quarantine pest	09/01/2004	09/01/2007	Agricultural/horticultural related	Ralstonia solanacearum	Bacteriology	45000
France	INRA	Development and databasing of barcodes for insects of agricultural significance	09/01/2003	09/01/2007	Expertise related	Diabrotica virgifera	Entomology	30000
France	FNPPT	Development of detection tools and monitoring for potato viruses	05/01/2007	05/01/2008	Agricultural/horticultural related	Large number of insects of agricultural significance	Entomology	45000
France	FNPPT	Innovative tools for the detection of viruses involved in potato tuber necrosis	05/01/2006	04/01/2009	Agricultural/horticultural related	PVY, PLRV, PVX, PVA	Virology	239000
France	FNPPT					Potato Virus Y, Potato tuber-necrosis inducing Disease (PTNRD)	Virology	156000

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France	FNPPPT	Study on plant/insects/virus relationships	05/01/2007	04/01/2010	Agricultural/horticultural related	Aphididae (and Leptinotarsa decemlineata)	Entomology	318000
France	FNPPPT	improvement of monitoring and control of potato viruses vectors (aphids)	05/01/2007	05/01/2008	Agricultural/horticultural related	Aphididae and potato viruses	Entomology	77000
France	FNPPPT	Development and improvement of the control of superficial diseases of potato tuber	05/01/2006	05/01/2009		Streptomyces; Helminthosporium solani; Colletotrichum coccodes	Mycology	222000
France	FNPPPT	Epidemiology and prevention of Ralstonia solanacearum and Clavibacter michiganensis	05/01/2007	05/01/2008	Agricultural/horticultural related	Ralstonia solanacearum, Clavibacter michiganensis	Bacteriology	113000
France	FNPPPT	Detection and epidemiology of bacteria (Erwinia) on potato	05/01/2006	04/01/2009		Erwinia	Bacteriology	222000
Germany	BMELV EH	Potential alternative food plants in Germany for Diabrotica virgifera virgifera larvae from European origin.	09/01/2004	09/01/2006	Agricultural/horticultural related	Diabrotica virgifera virgifera	Entomology	98421
Germany	BMELV EH	Sanitary measures for the reduction of risk of the spread of quarantine organisms	11/01/2004	11/01/2007	Agricultural/horticultural related	Clavibacter michiganense ssp. Sepedonicus,	Bacteriology	259636
Germany	BMELV EH	Resistance screening of German Maize cultivars against the invasive Diabrotica virgifera virgifera and the identification of resistance factors	12/01/2004	11/01/2007	Agricultural/horticultural related	Diabrotica virgifera virgifera	Entomology	69627
Germany	BMELV EH	Filtration of irrigation water in container nurseries for non-chemical control of Phytophthora spp. in water	03/01/2003	02/01/2007	Agricultural/horticultural related	e. g. Phytophthora ramorum	Mycology	213532
Germany	BMELV 54401	Economical evaluation of measures against Diabrotica virgifera virgifera	02/01/2005	07/01/2005	Agricultural/horticultural related	Diabrotica virgifera virgifera	Entomology	9500
Germany	BMELV 54402	Laboratory studies in the context of import inspections of wood package especially considering	08/01/2005	12/01/2005	Forestry related	divers	Entomology	12000
Germany	BMELV 54403	Occurrence of viroids in tomato seed from third countries.	10/01/2005	06/01/2006	Agricultural/horticultural related	divers, PSTVd	Nematology	
Germany	BMELV 54404	Studies on the evaluation and risk assessment of Ambrosia artemisiifolia appearance in Germany	07/01/2006	12/01/2006	Environmental related	Ambrosia artemisiifolia	Virology	9500
Germany	BBA	Studies on chestnut blight (Cryphonectria parasitica)	06/01/2006	01/01/2050	Forestry related	Cryphonectria parasitica	Botany	15000
Germany	BBA	Investigations on the susceptibility and risk of spreading of Ceratocystis fimbriata	01/01/2005	01/01/2050	Agricultural/horticultural related	Ceratocystis fimbriata	Mycology	7500
Germany	BBA	Investigations on Diplodia blight on Pinus spp.	01/01/2005	01/01/2050	Forestry related	Sphaeropsis sapinea	Mycology	15000
Germany	BBA	Studies on Cylindrocladium buxicola	02/01/2007	01/01/2050	Agricultural/horticultural related	Cylindrocladium buxicola	Mycology	15000
Germany	BBA	Studies on Phytophthora kernoviae and P. lateralis and other P. spp	01/01/2006	01/01/2050	Agricultural/horticultural related	Phytophthora kernoviae, P. lateralis, Phytophthora spp.	Mycology	7500
Germany	BBA	Studies on Phytophthora ramorum	01/01/2001	01/01/2050	Agricultural/horticultural related	Phytophthora ramorum	Mycology	15000
Germany	BBA	The risk of spread of Ralstonia solanacearum with irrigation water in Pelargonium.	07/01/2006	07/01/2007	Agricultural/horticultural related	Ralstonia solanacearum	Bacteriology	22500
Germany	BBA	Studies on consequences of climate change on non native species and useful organisms e.g. Harmonia axyridis	01/01/2007	12/01/2009	Agricultural/horticultural related	divers, Harmonia axyridis	Entomology	12000
Germany	BBA	Development of control strategies for Meloidogyne chitwoodi	01/01/1950	01/01/2050	Agricultural/horticultural related	Meloidogyne chitwoodi	Nematology	7500
Germany	BBA	Molecular characterisation of Meloidogyne chitwoodi	01/01/1950	01/01/2050	Agricultural/horticultural related	Meloidogyne chitwoodi	Nematology	7500
Germany	BBA	Quarantine nematodes in samples of imported material	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Nematology	7500

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Germany	BBA	Resistance against Globodera spp.	01/01/1950	01/01/2050	Agricultural/horticultural related	Globodera spp.	Nematology	15000
Germany	BBA	Molecular characterisation and determination of virulence of populations of Globodera pallida	01/01/1950	01/01/2050	Agricultural/horticultural related	Globodera pallida	Nematology	22500
Germany	BBA	Molecular characterisation of Ditylenchus dipsaci	01/01/1950	12/01/2008	Agricultural/horticultural related	Ditylenchus dipsaci	Nematology	15000
Germany	BBA	Control measures against Globodera spp.	01/01/1950	01/01/2050	Agricultural/horticultural related	Globodera spp.	Nematology	7500
Germany	BBA	Development of specific methods for statutory testing of plant resistance towards plant parasitic nematodes and development of guidelines for testing.	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Nematology	22500
Germany	BBA	Studies on the occurrence, spread and control of Ditylenchus dipsaci considering changed conditions of crop growing and habitat	01/01/1950	01/01/2050	Agricultural/horticultural related	Ditylenchus dipsaci	Nematology	30000
Germany	BBA	Development of resistance testing methods for establishing guidelines for resistance testing against Meloidogyne chitwoodi	01/01/1950	01/01/2050	Agricultural/horticultural related	Meloidogyne chitwoodi	Nematology	7500
Germany	BBA	Development and optimisation of diagnostic methods for quarantine nematodes	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Nematology	7500
Germany	BBA	Maintenance and expansion of the German collection of nematodes as basis for the diagnosis of current and newly introduced plant parasitic nematodes	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Nematology	7500
Germany	BBA	Studies on quarantine viroses on strawberries	01/01/1950	01/01/2050	Agricultural/horticultural related		Virology	7500
Germany	BBA	Studies on little cherry virus	01/01/1950	01/01/2050	Agricultural/horticultural related	Little cherry virus	Virology	7500
Germany	BBA	Studies on Plum pox virus	01/01/1950	01/01/2050	Agricultural/horticultural related	Plum pox virus	Virology	7500
Germany	BBA	Establishment and maintenance of plant virus collections for the diagnosis of newly emerging viruses and virus strains	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Virology	45000
Germany	BBA	Propagation and maintenance of the collection of phytopathogenic bacteria and fungi as a basis for	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Bacteriology	135000
Germany	BBA	Development of procedures for the control of bacteria and phytoplasmas in fruit crops (e.g.	01/01/1950	01/01/2050	Agricultural/horticultural related	Erwinia amylovora, divers	Mycology	30000
Germany	BBA	Development of detection methods for viruses, viroids and phytoplasmas on fruit crops (e.g. little	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Bacteriology	22500
Germany	BBA	Investigations on the characterization and effects of viruses in fruit crops (e.g. little cherry)	01/01/1950	01/01/2050	Agricultural/horticultural related	divers	Phytoplasmas	22500
Germany	BBA	Elaborating and harmonization of diagnostic methods for regulated pests and diseases (fruit crops)	01/01/1950	01/01/2050	Agricultural/horticultural related		Virology	52500
Germany	BBA						Entomology	
Germany	BBA						Nematology	
Germany	BBA						Bacteriology	
Germany	BBA						Mycology	
Germany	BBA						Phytoplasmas	
Germany	BBA	Defence mechanisms of apple varieties and rootstocks against fire blight using biotechnological methods. Host-Pathogen-Interactions. Transport and distribution of the pathogen in host plants.	01/01/1950	01/01/2050	Agricultural/horticultural related	Erwinia amylovora	Bacteriology	7500

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Germany	BBA	Characterisation and epidemiology of phytoplasmas on grapevine	01/01/1950	01/01/2050		divers phytoplasmas	Phytoplasmas	30000
Germany	BBA	Differentiation of host races of phytoplasma vectors	01/01/2006	01/01/2050		divers phytoplasmas	Phytoplasmas	15000
Germany	BBA	Potential effects of climat change on insect vectors of virus- and phytoplasma diseases	01/01/2005	01/01/2050		divers phytoplasmas and viruses	Entomology	22500
Germany	BBA						Phytoplasmas	
Germany	BBA						Virology	
Germany	BBA	Significance of stolbur phytoplasmas and their vectors on potatoes	01/01/2007	12/01/2008	Agricultural/horticultural related	Stolbur (16SrXII-A)group phytoplasmas	Phytoplasmas	7500
Germany	BBA	Carrying out of and contribution in risk analysis and assessments regarding the risk of introduction and spread of pests considering regional (EPPO) and international (FAO/IPPC) plant health standards (for risk assessment and development of plant health standards regarding invasive alien species	01/01/1950	01/01/2050	Socio-economic level	divers, Anoplophora glabripennis, Diabrotica virgifera virgifera, Leucinodes orbonalis,	Entomology	127500
Germany	BBA						Nematology	
Germany	BBA						Mycology	
Germany	BBA						Virology	
Germany	BBA						120000	
Germany	BBA	Risk assessment and development of plant health standards regarding invasive alien species	01/01/1950	01/01/2050	Agricultural/horticultural related	Anoplophora spp., Bursaphelenchus spp.,	Entomology	67500
Germany	BBA	Development and harmonization of methods regarding the diagnosis of quarantine pests and newly introduced pests in Germany	01/01/1950	01/01/2050	Agricultural/horticultural related	Anoplophora spp., Bursaphelenchus spp., Cerambycidae, Clavibacter	Nematology	
Germany	BBA						Bacteriology	
Germany	BBA						Mycology	
Germany	BBA						Virology	
Germany	BBA						37500	
Germany	BBA	Assessment phytosanitary risk of secondary raw material fertilisers and debris (e.g. from potato processing) concerning possible risks for plant health	01/01/1950	01/01/2050	Environmental related	those pests that are able to close infection cycles in plant debris or after common biowaste treatment of the plant debris (com	Weeds, Plant Health Management, Regulation, Composting technology, Biogas Technology	
Germany	BBA							
Germany	BBA							
Germany	BBA							
Germany	BBA							
Germany	BBA	Cryoconservation of nematodes of the genus Bursaphelenchus	03/01/2007	03/01/2009	Forestry related	Bursaphelenchus spp.	Nematology	10000
Germany	BBA	Pathogenicity tests with recent describe Bursaphelenchus species on tree species native to Germany and Europe	06/01/2007	06/01/2009	Forestry related	Bursaphelenchus hildegardae, B. willibaldi, B. rainulfi, B. singaporensis, B. thailandae,	Nematology	10000
Germany	BBA						Bacteriology	172500
Germany	BBA	Development of technical foundation for plant health measures and regulations regarding	01/01/1950	01/01/2050	Socio-economic level	forest insects, wood nematodes, Diabrotica	Virology	
Germany	Ge projects	In vitro study of host-Phytophthora ramorum interaction, using green fluorescent protein (GFP)	04/01/2006	03/01/2007	Agricultural/horticultural related	Phytophthora ramorum	Mycology	
Germany	Ge projects	Molecular characterisation of viruses (Closteroviridae) and their infectiousness on new	04/01/2006	04/01/2008	Agricultural/horticultural related	divers viruses, GLRAV-1, GLRaV-7	Virology	
Germany	Ge projects	Characterisation and epidemiology of phytoplasmas on grapevine	01/01/1950	01/01/2050		divers Phytoplasmas	Phytoplasmas	
Italy	MPAF	Induction of direct and indirect resistance to Nezara viridula following up phytomizus attack	01/01/2006	01/01/2008	Agricultural/horticultural related		Entomology	14150
Italy	MPAF	To study the tritrophic system tomato-Macrosiphum euphorbiae-Aphidius ervi.	01/01/2006	01/01/2008	Agricultural/horticultural related	Macrosiphum euphorbiae	Entomology	10650
Italy	MPAF	Study on tomato-phytomizus- miridi dicifini complex, with particular attention to defence mechanisms, constitutive and/or induced, that the tomato plant make for attracting the miridi predator defining a efficacious defence strategies to low environment	01/01/2006	01/01/2008	Agricultural/horticultural related		Entomology	9200

Country	Short name	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines	Budget	
Italy	MPAF	Influence of water stress on direct and indirect defense from M. EUPHORBIAE in commercial varieties of tomato plant in hemifield conditions and evaluation of volatiles induced by phytophagous, extract from plants, like attractive for the parasitic.	01/01/2006	01/01/2008	Agricultural/horticultural related	Macrosiphum euphorbiae	Entomology	8850	
Italy	MPAF	To develop a new molecular diagnosis method based on nested-PCR in real time with genus-	01/01/2006	01/01/2008	Agricultural/horticultural related	new molecular methods for the ecology and epidemiology diagnosis and study of subterranean phytophthora species	Mycology genetic	8800	
Italy	MPAF	To study a new molecular diagnosis method based on RT-PCR in real time, with primer designed on the grounds of cDNA sequences obtained from	01/01/2006	01/01/2008	Agricultural/horticultural related		Mycology Invasive alien plants genetic		
Italy		To study a new analysis molecular method by means of PCR in real time with specific primer for	01/01/2006	01/01/2008	Agricultural/horticultural related		Mycology genetic	10700	
Italy		To develop and make perfect the diagnosis methods based on RT-PCR in real time	01/01/2006	01/01/2008			Mycology genetic	11900	
Italy		MPAF	To study the biologic and biochemical aspects of resistance in Myzus persicae	01/01/2005	01/01/2007		Agricultural/horticultural related	Mycology genetic	11390
Italy		MPAF	To study the genetic bases of resistance in Myzus persicae.	01/01/2005	01/01/2007		Agricultural/horticultural related	Entomology	10500
Italy	MPAF	The research expect the harvesting of T. urticae populations from herbaceous and ornamental	01/01/2005	01/01/2007	Agricultural/horticultural related	Entomology	9970		
Italy	MPAF	Kinetic-molecular characterization and purification of acetylcholinesterase from M.	01/01/2005	01/01/2007	Agricultural/horticultural related	Resistance to pesticide in agricultural interest arthropods	Entomology	8570	
Italy	MPAF	Study of recovery in natural models ambit, apricot tree/ESFY and apple tree/ AP	01/01/2005	01/01/2007	Agricultural/horticultural related		Entomology	9450	
Italy	MPAF	To control some serious illness from phytoplasmas (PY) ( like Apple proliferation= AP; Pear decline = PD; European stone fruit yellows = ESFY; Flavescence dorée = FD; Bois noir = BN o legno negro = LN) for which are not availableefficient means of care, bu	01/01/2005	01/01/2007	Agricultural/horticultural related	Apple proliferation, Pear decline, European stone fruit yellows, Flavescence dorée, Bois noir	Phytoplasmas	12100	
Italy	MPAF	Biologic and integrated control of Tefriditi diptérons	12/01/2006	12/01/2008	Agricultural/horticultural related		Phytoplasmas	9250	
Italy	MPAF	Biologic and integrated control of Tefriditi diptérons	12/01/2006	12/01/2008	Agricultural/horticultural related	COBIODIT	Entomology	48000	
Italy	MPAF	Evaluation of substances to control apple proliferation in cultivar and selection of apple tree coming from breeding programs aimed to find resistance and/or tolerance to Venturia inaequalis and apple proliferation	11/01/2004	12/01/2007	Agricultural/horticultural related		Entomology	9500	
Italy	MPAF	Investigations on genetic variability in characterized phytoplasmas in apple trees natural infected and in apple tree selection tolerant and/or resistant to Venturia inaequalis	11/01/2004	12/01/2007	Agricultural/horticultural related	Fitoremo control of infection caused by phytoplasma in apple tree and research of tolerance and resistance source to venturia inaequalis by means of molecular biology techniques	Phytoplasmas	29100	
Italy	MPAF	Investigation of markers associated to apple proliferation resistance and marker assisted selection for Venturia inaequalis resistance	11/01/2004	12/01/2007	Agricultural/horticultural related		Phytoplasmas	27100	
Italy	MPAF	Investigation on relationship between quantitative aspects of infection and varietal susceptibility to apple proliferation phytoplasm	11/01/2004	12/01/2007	Agricultural/horticultural related		Phytoplasmas	23000	
Italy	MPAF	Characterization of Fusarium oxysporum f.sp.melonis population	10/01/2005	12/01/2008	Agricultural/horticultural related		Phytoplasmas	23100	
							Mycology	26100	

Country	Short name	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines	Budget
Italy	MPAF	Characterization of virulence genetic determinant in Fusarium Oxysporum f.sp. melonis and melon resistance	10/01/2005	12/01/2008	Agricultural/horticultural related	Fusamelo reserach into virulence/resistance mechanisms to fusariosi for selection and c onstitution of resistant melon varieties	Mycology	21600
Italy	MPAF	Identification of molecular markers for the fusariosi resistance and selection of melon resistant genotype to race 1,2 of Fusarium oxysporum f.sp. melonis	10/01/2005	12/01/2008	Agricultural/horticultural related		Mycology	18900
Italy	MPAF	Study of characterization and diffusion of phytoplasmas that cause grapevine's yellows in centre of Italian territory	12/01/2003	06/01/2007	Agricultural/horticultural related	Giavi grapevines yellows : a limitant factor for wine growing production	Phytoplasmas	77300
Italy	MPAF	Mapping, characterization and alternative hosts of gapevine Flavescence dorée and Bois noir	12/01/2003	06/01/2007	Agricultural/horticultural related		Phytoplasmas	30000
Italy	MPAF	Interventions for damages control caused by Grapevine's yellows	12/01/2003	06/01/2007	Agricultural/horticultural related		Phytoplasmas	78400
Italy	MPAF	Grapevine's yellows in Lombardia	12/01/2003	06/01/2007	Agricultural/horticultural related		Phytoplasmas	31000
Italy	MPAF	Grapevine's yellows: study directed towards the attainment of symptoms regression	12/01/2003	06/01/2007	Agricultural/horticultural related		Phytoplasmas	39400
Italy	MPAF	Bio ethology and epidemiology influence of Rhynchota Homoptera vector for the diffusion of	12/01/2004	06/01/2007	Agricultural/horticultural related		Entomology	30800
Italy	MPAF	Bio-etho-ecology and control strategies of S.Titanus, H.obsoletus and other Auchenorrhinco	12/01/2003	06/01/2007	Agricultural/horticultural related		Entomology	
Italy	MPAF	Molecular biodiversity and grapevine's yellows epidemiology	12/01/2003	06/01/2007	Agricultural/horticultural related		Phytoplasmas	32450
Italy	MPAF	Research into grapevine's yellows and about their vector in Sicily area	12/01/2003	06/01/2007	Agricultural/horticultural related		Phytoplasmas	30000
Italy	MPAF	Definition of guide lines of action for prevent esotic insects introduction in Italian area.	12/01/2004	12/01/2007	Agricultural/horticultural related		Entomology	33500
Italy	MPAF	Develop of new methods for defending and preventing new phytophagous settlement	12/01/2004	12/01/2007	Agricultural/horticultural related	Phytoplasmas	50600	
Italy	MPAF	Definition of techniques for the phytosanitary monitoring of national main entrance of esotic phytophagous insects; Conservation techniques of useful being for phytosanitary defence of agrarian crops and forestal plants	12/01/2004	12/01/2007	Agricultural/horticultural related	Entomology	34900	
Italy	MPAF	To verify sistem efficacy of physics disinfection for the treatment of agrarian products to destining to human feeding	12/01/2006	12/01/2008	Agricultural/horticultural related	Prevento : prevention and protection of agriculture and environment from exotic arthropods	Bacteriology	140000
Italy							Mycology	
Italy							Phytoplasmas	
Italy	MPAF	Study about restoring treatments effects on legumes quality	12/01/2006	12/01/2008	Agricultural/horticultural related	Risale curing legumes methodology from parasites through microwaves	Bacteriology	30000
Italy							Mycology	
Italy							Phytoplasmas	
Italy	MPAF	Use of reverberating chambers with microwaves for the treatment of foodstuffs	12/01/2006	12/01/2008	Agricultural/horticultural related	Risale curing legumes methodology from parasites through microwaves	Bacteriology	46000
Italy							Mycology	
Italy							Phytoplasmas	
The Netherlands	Min	Virulence of Dutch Globodera (Virulentie aardappelcysteaaltjes)	01/01/2006	12/01/2007	Agricultural/horticultural related	Globodera pallida	Nematology	40000
The Netherlands	Min	Natural decline of Potato cyst nematodes. (Natuurlijke afname van aardappelcysteaaltjes)	01/01/2006	12/01/2007	Agricultural/horticultural related	Globodera spp.	Nematology	55000
The Netherlands	Min	Phytophthera in tree species. (Voorkomen Phytophthera)	01/01/2006	12/01/2007	Agricultural/horticultural related	Phytophthera spp.	Mycology	125000
The Netherlands	Min	Stern injection ALB (Effectiviteit staminjectie ter bestrijding van boktorren)	01/01/2006	12/01/2007	Agricultural/horticultural related	Anoplophora spp.	Entomology	200000

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The Netherlands	Min	Generic PCR test methods for plant viruses (Virus PCR)	01/01/2006	12/01/2008	Agricultural/horticultural related		Virology	300000
The Netherlands	Min	Viruses transmitted in potato by aphids			Agricultural/horticultural related		Entomology	600000
The Netherlands	Min	(Virusoverdracht door bladluizen in aardappelen)	01/01/2006	12/01/2008	Agricultural/horticultural related		Virology	
The Netherlands	Min	Virus transmission in flower bulbs by aphids			Agricultural/horticultural related		Entomology	225000
The Netherlands	Min	(Virusoverdracht door bladluizen in)	01/01/2006	12/01/2008	Agricultural/horticultural related		Virology	
The Netherlands	Min	Races within stem nematode (Rassenconcept van stengelaaftjes)	01/01/2006	12/01/2007	Agricultural/horticultural related	Ditylenchus dipsaci	Nematology	65000
The Netherlands	Min	Resistance in potato varieties against Synchytrium endobioticum.(Resistentie S. endobioticum)	01/01/2007	12/01/2007	Agricultural/horticultural related	Synchytrium endobioticum	Nematology	80000
The Netherlands	Min	Xanthomonas fragariae (Eliminatie van X. fragariae in aardbei)	01/01/2007	12/01/2007	Agricultural/horticultural related	Xanthomonas fragariae	Bacteriology	40000
The Netherlands	Min	Sampling methods for the detection of Meloidogyne. (Bemonstering van Meloidogyne)	01/01/2007	12/01/2007	Agricultural/horticultural related	Meloidogyne spp.	Nematology	30000
The Netherlands	Min	Datamining PRA (Productie- en handelsdata voor fyto-sanitair risicomangement)	01/01/2007	12/01/2007	Agricultural/horticultural related			50000
The Netherlands	Min	Applying the cost efficiency model (Toepassing kosteneffectiviteitmodel)	01/01/2007	12/01/2007				20000
The Netherlands	Min	Decision support systeem (Institutionele analyse markttoegang)	02/01/2007	05/01/2007				20500
The Netherlands	Min	Alternatives for "Reduced Checks" (Alternatieven "Reduced Checks")	01/01/2007	03/01/2007				30000
The Netherlands	Min	Cost-benefit analysis of demarcation of Meloidogyne findings (Gebiedsafbakening Meloidogyne)	10/01/2006	12/01/2007		Meloidogyne spp.	Nematology	30000
The Netherlands	Min	Crop intensity and interrelations (Teeltintensiteit en verwevenheid)	01/01/2007	04/01/2007				50000
The Netherlands	PD	Nysius huttoni	04/01/2006	02/01/2007	Agricultural/horticultural related	Nysius huttoni	Entomology	32481
The Netherlands	PD				Agricultural/horticultural related		Entomology	106774
The Netherlands	PD	AIO virus-vector (IYSV)	03/01/2006	12/01/2009	Agricultural/horticultural related	Thrips tabaci IYSV	Virology	
The Netherlands	PD	Bio-economic modelling of Ringrot	02/01/2007	08/01/2008	Agricultural/horticultural related	Clavibacter michiganensis subsp. sepedonicus	Bacteriology	64000
Slovenia	MAFF	Development of a real-time PCR assay for the detection of fruit, grapevine and hop viroid	01/01/2007	12/01/2009	Agricultural/horticultural related		Virology	135552
Slovenia	MAFF	Further research of Raspberry bushy dwarf virus, newly discovered virus of grapevine	07/01/2004	06/01/2007	Agricultural/horticultural related	Raspberry bushy dwarf virus	Virology	60847
Slovenia	MAFF	Usage of entomopathogenic nematodes in plant protection - the method optimization	07/01/2004	06/01/2007	Agricultural/horticultural related		Nematology	59762
Slovenia	MAFF	ROOT PATHOGENIC CYLINDROCARPON SPECIES OF VITIS VINIFERA IN SLOVENIA	09/01/2005	08/01/2008	Agricultural/horticultural related	cylindrocarpon	Mycology	84921
Slovenia	MAFF	STUDY OF PESTICIDE RESISTANCE TO SOME OF PLANT PATHOGENS	10/01/2006	01/01/2009	Agricultural/horticultural related		Entomology	
	MAFF						Mycology	79285
Slovenia	MAFF	CHARACTERIZATION OF THE PATHOTYPES OF THE PCN GLOBODERA ROSTOCHIENSIS AND EVALUATION OF THE VARIABILITY OF ITS PARASITISM GENES	10/01/2006	09/01/2008	Agricultural/horticultural related	Globodera rostochiensis	Nematology	57586
Slovenia	MAFF				Agricultural/horticultural related		Nematology	
Slovenia	MAFF	DIAGNOSTICS OF GRAPEVINE DISEASES	10/01/2006	09/01/2009	Agricultural/horticultural related		Virology	110582
Slovenia	MAFF	PREVENTION OF CEREAL AND MAIZE CONTAMINATION WITH TOXINS OF MOULDS FROM GENUS FUSARIUM	10/01/2006	09/01/2008	Agricultural/horticultural related		Mycology	58420

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Slovenia	MAFF	Invasive fungi and insects harmful to forest	01/01/2007	12/01/2008	Forestry related		Mycology	90272
Slovenia	MAFF	Harmful factors for forest in contemporary time: monitoring, ecological modelling, influence of	10/01/2006	09/01/2008	Forestry related		Entomology	141879
	MAFF						Mycology	
Spain	INIA	Integrated pest control in food industry by using CO2 and biological control combined	10/01/2005	10/01/2008	Agricultural/horticultural related		Entomology	62416
Spain	INIA	Biological control to prevent the introduction of the aphid toxoptera citricada, one of the main vector of the tristeza virus	10/01/2005	10/01/2008	Agricultural/horticultural related	toxoptera citricada	Entomology	53508
Spain	INIA	Improvement of knowledge of direct and indirect integrated control methods of the banana weevil borer (Cosmopilites sordidus)	10/01/2005	10/01/2008	Agricultural/horticultural related	Cosmopilites sordidus	Entomology	68587
Spain	INIA	Isolation and molecular characterization of bacteria and viruses in horticultural crops	10/01/2005	10/01/2008	Agricultural/horticultural related		Virology	100900
Spain	INIA	Identification, spread, pathogenicity and control of the fungi responsible for the grapevine trunk fungal diseases	10/01/2005	10/01/2008	Agricultural/horticultural related		Mycology	87888
Spain	INIA	Symptomatology, epidemiology and control of the fungi responsible for the grapevine trunk fungal diseases	10/01/2005	10/01/2008	Agricultural/horticultural related		Mycology	44065
Spain	INIA	Epidemiology and integrated control of Monilinia spp in peach trees	10/01/2005	10/01/2008	Agricultural/horticultural related	Monilinia spp	Mycology	165404
Spain	INIA	Control of elm trees graphiosis (Ceratocystis ulmi) by using phenolic compounds	10/01/2005	10/01/2008	Agricultural/horticultural related	Ceratocystis ulmi	Mycology	37670,8
Spain	INIA	Control of tristeza virus in citrus nursery (epidemiology, evaluation of cross natural protection and of biotechnological techniques)	10/01/2005	10/01/2008	Agricultural/horticultural related	Tristeza virus	Virology	81960
Spain	INIA	Roll leaf virus in vineyards: epidemiology and effect on the wine quality	10/01/2005	10/01/2008	Agricultural/horticultural related	Leaf roll virus	Virology	60809
Spain	INIA	Epidemiology and negative effects of leafroll virus on must quality of red wines	10/01/2005	10/01/2008	Agricultural/horticultural related	Leaf roll virus	Virology	32936,8
Spain	INIA	Improvement of integrated control of pests in fruits and citrus: biology and ecology studies of the Mediterranean fruit fly (Ceratitis capitata) and optimization of the masive capture techniques	10/01/2006	10/01/2009	Agricultural/horticultural related	Ceratitis capitata	Entomology	103454,2
Spain	INIA	Selection of antagonist organisms against root-knot nematodes galling (Meloidogyne spp.) for use them in biological control programmes.	10/01/2006	10/01/2009	Agricultural/horticultural related	Meloidogyne spp.	Nematology	72360,2
Spain	INIA	Epidemiology, biological and molecular characterization of parietaria mottle virus (PMoV-T) infecting tomatoes. Development of diagnostic methods and improvement of the resistance against of the parietaria mottle virus (PMoV-T)	10/01/2006	10/01/2009	Agricultural/horticultural related	PMoV-T	Virology	80190
Spain	INIA	Development of diagnostic techniques for an emerging pest caused by different pathogenic agents that caused wilt and necrosis in beans	10/01/2006	10/01/2009	Agricultural/horticultural related		Virology	40095
Spain	INIA	Development of detection and survival methods for Xanthomonas responsible for necrosis in citrus	10/01/2006	10/01/2009	Agricultural/horticultural related	Xanthomonas	Bacteriology	40095
Spain	INIA	Verticillium spp disease and weed control in olive crop by using brassicae species as vegetal covers	10/01/2005	10/01/2008	Agricultural/horticultural related	Verticillium spp	Mycology	229019
Spain	INIA	Diagnostic and characterization of Pseudomonas phytopathogenic bacterias in agricultural interesting crops	10/01/2005	10/01/2008	Agricultural/horticultural related	Pseudomonas	Bacteriology	59400

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Spain	INIA	control of tylenchus semipenetrans with biological, genetical and cultivation methods in integrated citrus production	10/01/2005	10/01/2008	Agricultural/horticultural related	Tylenchus semipenetrans	Nematology	57728
Spain	INIA	Identification and epidemiology of vineyard phytoplasmas	10/01/2005	10/01/2008	Agricultural/horticultural related		Phytoplasmas	85194
Spain	INIA	virus diagnostics in vineyard	10/01/2005	10/01/2008	Agricultural/horticultural related		Virology	36000
Spain	INIA	Influence of the water of the river in verticilosis epidemiology in Andalusia for olive trees and cotton trees	10/01/2006	10/01/2009	Agricultural/horticultural related		Mycology	40095
Spain	INIA	Epidemiology and control of beans (Phaseolus vulgaris L) cultivated in southeast of Spain	10/01/2006	10/01/2009	Agricultural/horticultural related		Virology	40095
Spain	INIA	Development of integrated control strategies for tomatoe diseases in Canaria islands	10/01/2006	10/01/2009	Agricultural/horticultural related		Mycology	90711
Spain	INIA	Epidemiology and characterization of the bean yellow disorder virus	10/01/2006	10/01/2009	Agricultural/horticultural related	bean yellow disorder virus	Virology	40095
Switzerland	FOAG	study of current and emerging virus and similar diseases (phytoplasmoses) of grapevine in Switzerland, sanitary selection, updating and development of methods and reagents for diagnosis and means of control	01/01/2004	12/01/2007	Expertise related		Phytoplasmas	200000
Switzerland	FOAG	Survey and study of current and emerging virus and similar diseases (phytoplasmoses) of horticultural crops, virus tests, updating and development of	01/01/2004	12/01/2007	Agricultural/horticultural related		Bacteriology	200000
Switzerland	FOAG	Follow up and survey of current and emerging bacterial diseases of horticultural crops, bacterial tests, updating of methods and reagents for diagnosis and means of control	01/01/2004	12/01/2007	Agricultural/horticultural related		Phytoplasmas	
Switzerland	FOAG	Follow up and survey of current and emerging bacterial diseases of field crops, bacterial tests, updating of methods and reagents for diagnosis and means of control	01/01/2004	12/01/2007	Agricultural/horticultural related		Virology	
Switzerland	FOAG	Study and survey of emerging fungal diseases and development of tools for diseases risk assessment in field crops	01/01/2004	12/01/2007	Agricultural/horticultural related		Bacteriology	200000
Switzerland	FOAG	Study and monitoring of insect pests on grapevine	01/01/2004	12/01/2007	Agricultural/horticultural related		Mycology	200000
Turkey	GDAR	Constitute an in-situ virus collection to improve diagnosis and identification facility for virus and virus like diseases in Turkey	01/01/2006	12/01/2008	Agricultural/horticultural related	Virus and virus like diseases	Virology	31776
Turkey	GDAR	Investigation on Biology, Epidemiology and Control of Potato Wart Disease Caused by Synchytrium endobioticum (Schilb) Perc.	05/01/2006	05/01/2009	Agricultural/horticultural related	Synchytrium endobioticum (Schilb) Perc.	Mycology	37823
Turkey	GDAR	Investigations on the Determination of Pathotypes of Potato Wart (Synchytrium endobioticum (Schilb.) Percival) Pathotypes and The Resistant Potato Varieties To The Pathotypes in Potato Production Areas of Turkey	01/01/2004	12/01/2007	Agricultural/horticultural related	Synchytrium endobioticum (Schilb.)Percival	Mycology	118358
Turkey	GDAR	Improvement Of Turkish Cotton Varieties Using Molecular Techniques	01/01/2004	12/01/2008	Agricultural/horticultural related	Verticillium dahliae	Mycology	108168
Turkey	GDAR	Investigation on using of molecular techniques of determination virus and virus like diseases on vinyard	01/01/2007	12/01/2010	Agricultural/horticultural related	Virus and virus like diseases	Virology	127682

Country	Short name	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines	Budget
Turkey	GDAR	A study of taxonomic characteristics, intensities and prevalence of plant parasitic nematode species in rice plants ( <i>Oryza sativa</i> L.) in Çankiri and Çorum districts	06/01/2005	12/01/2007	Agricultural/horticultural related	Aphelenchida, Tylenchida	Nematology	2573
Turkey	GDAR	Investigation on the effectiveness of Cold-Treatment against Mediterranean Fruit Fly ( <i>Ceratitis capitata</i> Wied.) (Diptera: Tephritidae) after its inoculation to citrus fruits	01/01/2004	12/01/2007	Agricultural/horticultural related	<i>Ceratitis capitata</i>	Entomology	52000
Turkey	GDAR	Research on the effective control methods against codling moth [ <i>Cydia pomonella</i> (L.) (LEPIDOPTERA : TORTRICIDAE)] following its artificial infestation into the cherry fruit	01/01/2004	12/01/2007	Agricultural/horticultural related	<i>Cydia pomonella</i> (quarantine pest in Japan)	Entomology	52000
Turkey	GDAR	Investigations on the effect of different control methods applied to artificially inoculated cherry fruits with Mediterranean fruit fly ( <i>Ceratitis capitata</i> Wied.) (Diptera: Tephritidae).	01/01/2004	12/01/2007	Agricultural/horticultural related	<i>Ceratitis capitata</i>	Entomology	15000
United Kingdom	Defra	Understanding the incidence and spread of <i>Phytophthora ramorum</i> using epidemiological modelling	09/01/2005	12/01/2007	Agricultural/horticultural related	<i>Phytophthora ramorum</i>	Mycology	341938
United Kingdom	Defra	Development and testing of a model epidemiological framework to optimise the detection and intervention strategies for plant pathogens of statutory concern	01/01/2007	12/01/2009	Agricultural/horticultural related	Bacteriology	1082498	
United Kingdom	Defra					Mycology		
United Kingdom	Defra					Phytoplasmas		
United Kingdom	Defra					Virology		
United Kingdom	Defra					Modelling		
United Kingdom	Defra					Entomology	400996	
United Kingdom	Defra	Generic systems for the detection of statutory pests and pathogens (acoustics and volatiles)	05/01/2003	02/01/2007	Agricultural/horticultural related	<i>Ralstonia solanacearum</i>	Bacteriology	
United Kingdom	Defra	Novel diagnostic techniques for the detection of pests and diseases of statutory concern	04/01/2004	03/01/2007	Agricultural/horticultural related	<i>Phytophthora ramorum</i> ,	Entomology	344382
United Kingdom	Defra					<i>Bursaphelenchus xylophilus</i> ,	Nematology	
United Kingdom	Defra					<i>Ralstonia solanacearum</i> ,	Bacteriology	
United Kingdom	Defra					<i>Clavibacter michiganensis</i> subsp. <i>sepedonicus</i> ,	Mycology	
United Kingdom	Defra						Virology	
United Kingdom	Defra	Plant Health Taxonomic Fellowship II: <i>Aphelenchus</i> and related taxa: molecular systematics and molecular diagnostics	03/01/2005	02/01/2008	Expertise related	<i>Aphelenchus</i>	Nematology	99865
United Kingdom	Defra	Detection and monitoring of quarantine whitefly transmitted viruses in protected vegetable crops	10/01/2006	09/01/2007	Agricultural/horticultural related	Tomato chlorosis virus, Tomato infectious chlorosis	Entomology Virology	234531
United Kingdom	Defra	Molecular and morphological identification of the eggs and caterpillars of quarantine listed Noctuidae	04/01/2004	03/01/2007	Agricultural/horticultural related	<i>Helicoverpa armigera</i> , <i>Helicoverpa zea</i> , <i>Spodoptera littoralis</i> , <i>Spodoptera litura</i>	Entomology	90786
United Kingdom	Defra	Plant Health Taxonomic Fellowship III: Species boundaries in <i>Phytophthora</i> pathogens of trees	09/01/2004	09/01/2007	Expertise related	<i>Phytophthora ramorum</i> , <i>Phytophthora kernoviae</i> , <i>Phytophthora ilicis</i> , <i>Phytophthora species</i>	Mycology	93075
United Kingdom	Defra	Decontamination of <i>Phytophthora</i> species of statutory significance, including <i>Phytophthora ramorum</i> and <i>Phytophthora kernoviae</i> , from commercial HONS nurseries.	03/01/2005	02/01/2008	Agricultural/horticultural related	<i>Phytophthora ramorum</i> , <i>Phytophthora kernoviae</i>	Mycology	90786
United Kingdom	Defra	Management of plant health risks associated with processing of plant-based wastes	07/01/2006	09/01/2009	Agricultural/horticultural related	Bacteriology	828083	
United Kingdom	Defra					Mycology		
United Kingdom	Defra					Virology		
United Kingdom	Defra	Plant Health Taxonomic Fellowship IV: The taxonomy of phytoplasmas; a molecular approach	01/01/2006	01/01/2009	Agricultural/horticultural related	phytoplasma	Phytoplasmas	112007

Country	Short name	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines	Budget
United Kingdom	Defra	A modular approach to the integrated control of Thrips palmi	10/01/2005	09/01/2008	Agricultural/horticultural related	Thrips palmi, Bemisia tabaci	Entomology	341971
United Kingdom	Defra	Development and testing of a model epidemiological framework to optimise the detection and intervention strategies for plant pathogens of statutory concern	01/01/2007	12/01/2009	Agricultural/horticultural related		Bacteriology	1082498
United Kingdom	Defra						Mycology	
United Kingdom	Defra						Phytoplasmas	
United Kingdom	Defra						Virology	
United Kingdom	Defra						Modelling	
United Kingdom	Defra	Lateral Flow Device (LFD) diagnostics for Phytophthora ramorum and Phytophthora kernoviae	04/01/2006	05/01/2008	Agricultural/horticultural related	Phytophthora ramorum, Phytophthora kernoviae	Mycology	155695
United Kingdom	Defra	Phytophthora ramorum and Phytophthora kernoviae: Development of post-eradication strategies for management/treatment of contaminated substrates and inoculum at outbreak sites	04/01/2006	05/01/2007	Agricultural/horticultural related	Phytophthora ramorum, Phytophthora kernoviae	Mycology	78767
United Kingdom	Defra	Development of alternatives to the use of Methyl Bromide fumigation for intransit treatments for alien	04/01/2006	03/01/2009	Agricultural/horticultural related		Entomology	245561
United Kingdom	Defra						Nematology	
United Kingdom	Defra	Acoustic detection of statutory pests	07/01/2007	07/01/2010	Agricultural/horticultural related	Anoplophora chinensis, Anoplophora glabripennis, Hylotrupes bajulus	Entomology	298811
United Kingdom	Defra	Micropropagation of plant taxa at risk from Phytophthora ramorum	01/01/2005	08/01/2007	Agricultural/horticultural related	Phytophthora ramorum, Phytophthora kernoviae	Mycology	22697
United Kingdom	Defra	Eradication strategies for invasive non-native Ludwigia species	08/01/2006	04/01/2007	Environmental related	Ludwigia grandiflora	Invasive alien plants	14601
United Kingdom	Defra	Novel methods for the detection, identification and monitoring of pathogens and pests of statutory importance	04/01/2007	03/01/2010	Agricultural/horticultural related		Entomology	396432
United Kingdom	Defra						Nematology	
United Kingdom	Defra						Bacteriology	
United Kingdom	Defra						Mycology	
United Kingdom	Defra						Virology	
United Kingdom	Defra						Entomology	25723
United Kingdom	Defra						Nematology	
United Kingdom	Defra						Bacteriology	
United Kingdom	Defra						Mycology	
United Kingdom	Defra						Virology	
United Kingdom	Defra	Economic modelling and pest spread to develop pest risk assessment	04/01/2006	05/01/2009	Expertise related		Modelling	
United Kingdom	Defra	DNA-bank methodologies for the storage and amplification of precious DNA samples	04/01/2006	04/01/2007	Agricultural/horticultural related		Entomology	20953
United Kingdom	Defra						Nematology	
United Kingdom	Defra						Bacteriology	
United Kingdom	Defra						Mycology	
United Kingdom	Defra						Phytoplasmas	
United Kingdom	Defra						Virology	
United Kingdom	Defra						Entomology	28873
United Kingdom	Defra						Nematology	
United Kingdom	Defra						Bacteriology	
United Kingdom	Defra						Mycology	
United Kingdom	Defra	Phytoplasmas						
United Kingdom	Defra	Virology						
United Kingdom	Defra	Validation of methods for real-time PCR data analysis	04/01/2006	04/01/2007	Agricultural/horticultural related			
United Kingdom	Defra	Development of high-resolution molecular tools for pathovar and strain identification to improve evaluation, monitoring and surveillance of emergent bacterial plant pathogens	04/01/2006	04/01/2007	Agricultural/horticultural related		Bacteriology	201662
United Kingdom	Defra	Development of genomic extraction methods for identification of strain-specific DNA sequences	04/01/2006	04/01/2007	Agricultural/horticultural related		Bacteriology	20162

Country	Short name	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines	Budget
United Kingdom	Defra	Assessing the feasibility of using a microsatellite methodology to identify UK entry pathways for invasive insects, using the model system, <i>Diabrotica virgifera virgifera</i> (Western corn rootworm)	04/01/2006	04/01/2007	Agricultural/horticultural related	<i>Diabrotica virgifera virgifera</i>	Entomology	20306
United Kingdom	SEERAD	Work Package 1.5 - Potato Pathology	04/01/2006	03/01/2011	Agricultural/horticultural related			

**ANNEX 5: List of studied organisms mentioned in the partner countries' research projects**

<b>Bacteriology</b>	<b>Phytoplasma</b>	<b>Mycology</b>	<b>Entomology</b>	<b>Nematology</b>	<b>Virology</b>	<b>Inv. Species</b>
Clavibacter michiganensis sepedonicus	Apple proliferation	Ceratocystis fimbriata	Aleurocanthus	Aphelenchus spp	Bean Yellow mosaïc	Ambrosia artemisiae
Erwinia amylovora	European S.F.Y.	Ceratocystis ulmi	Anaplophora chinensis	Bursaphelenchus hidegardae	Cucurbit Yellows	Harmonia axyridis
Erwinia carotovora	Flavescence dorée	Colletotrichum acutatum	Anaplophora glabripennis	Bursaphelenchus rainulfi	GLRA V-1	Hydrocotyle
Pseudomonas sp	Grapevine's yellows	Colletotrichum coccodes	Anoplophora sp	Bursaphelenchus singaporensis	GLRA V-7	Iva
Ralstonia solanacearum	Pear decline	Cronatium flaccidum	Aphidius ervi	Bursaphelenchus spp	Little Cherry	Ludwigia grandiflora
Xanthomonas fragariae	Phytoplasmas	Cryphonectria parasitica	Auchenorinca homopterus	Bursaphelenchus thailandae	Pepino mosaïc Virus	
Xanthomonas sp.	Stolbur	Cylindrocarpon buxifolia	Bemisia tabaci	Bursaphelenchus willibaldi	PLRV	
		Cylindrocarpon spp	Cerambycidae	Bursaphelenchus xylophilus	Plum Pox	
		Diplodia sp.	Ceratitis capitata.	Ditylenchus dipsaci	Potato mop top	
		Fusarium circinatum	Cosmopolites sordidus	Globodera pallida	PstVd	
		Fusarium foetens	Cydia pomonella	Globodera rostochiensis	PTRND	
		Fusarium oxysporum melonis	Dendrolimus sibiricus	Globodera spp	PVA	
		Gremeniella abietina	Diabrotica virgifera virgifera	Herterodera glycines	PVX	
		Helminthosporium solani	Frankliniella occidentalis	Meloidogyne chitwoodi	PVY	
		Heterobasidium pariposum	Helicoverpa armigera	Meloidogyne fallax	Raspberry Bushy Dwarf V	
		Lophodermium foetidum	Helicoverpa zea	Meloidogyne spp	Tomato Chlorosis	
		Monilia fructicola	Heterobostr. harmatipennis	Tylenchulus semi-penetrans	Tomato infectious Chlorosis	
		Monilia spp	Hyalestes obsoletus		Tristeza	

Bacteriology	Phytoplasma	Mycology	Entomology	Nematology	Virology	Inv. Species
		Mycosphaerella dearnesii	Hylotrupes bajalus		TRSV	
		Phacidium infestans	Leptinotarsa decemlineata		TYLCV	
		Phytophthora cryptogea	Leucinodes orbonalis		Viroids	
		Phytophthora fragariae	Lygus lineolaris		Viruses & VLO	
		Phytophthora llicis	Macrosiphum euphorbiae			
		Phytophthora infestans	Myzus nicotianae			
		Phytophthora inflata	Myzus persicae			
		Phytophthora kernoviae	Nezara viridula			
		Phytophthora laleralis	Nysius huttoni			
		Phytophthora ramorum	Rhynchota			
		Phytophthora spp	Scaphoideus titanus			
		Plasmopara halstedii	Scrobipalposis solanivora			
		Puccinia horiana	Spodoptera littoralis			
		Rhizoctonia solani	Spodoptera litura			
		Sphaerosis sapinae	Tephretidae			
		Streptomyces sp	Tetanops myopaeformis			
		Synchytrium endobioticum	Thrips palmi			
		Venturia inaequalis	Thrips tabaci			
		Verticillium dahliae	Toxoptera citricarpa			
		Verticillium sp				

## ANNEX 6: Inventory of key research providers and non-governmental stakeholders supplied by EUPHRESCO partners

### Main Research Providers

<b>Country</b>	<b>English provider name</b>
<b>Austria</b>	Austrian Agency of Health and Food Safety
<b>Austria</b>	Federal Research and Training Centre for Forests, Natural Hazards and Landscape; Department of Forest Protection
<b>Austria</b>	University of Natural Resources and Applied Life Sciences; Department of Applied Plant Sciences and Plant Biotechnology
<b>Austria</b>	Vienna University of Technology; Institute of Chemical Engineering
<b>Austria</b>	Medical University of Vienna; Department of Pathophysiology
<b>Austria</b>	Federal College and Office for Viticulture and Pomology
<b>Austria</b>	Agricultural research and education centre Raumberg-Gumpenstein
<b>Austria</b>	Austrian Research Centres Seibersdorf; Bioresources
<b>Belgium</b>	The Federal Public Service for Public health, Food chain Safety and Environment
<b>Belgium</b>	Institute for agriculture and fisheries research
<b>Belgium</b>	Walloon center for agronomic researches
<b>Belgium</b>	Institute for Agricultural and fisheries research
<b>Belgium</b>	Agricultural Research Centre
<b>Belgium</b>	University of Ghent
<b>Bulgaria</b>	National Service for Plant Protection
<b>Cyprus</b>	Research Promotion Foundation
<b>Denmark</b>	University of Aarhus, Faculty of Agricultural Sciences
<b>Denmark</b>	University of Copenhagen, Faculty of Life Sciences, Institute for Plant Biology
<b>Denmark</b>	University of Copenhagen, Forest and Landscape
<b>Finland</b>	University of Helsinki, Department of Applied Biology
<b>Finland</b>	AgriFood Research Finland
<b>Finland</b>	University of Jyväskylä
<b>Finland</b>	Finnish Forest Research Institute
<b>Finland</b>	University of Joensuu, Faculty of Forestry
<b>Finland</b>	University of Kuopio
<b>Finland</b>	University of Oulu
<b>Finland</b>	Finnish Food Safety Authority
<b>Finland</b>	Central Organisation for Finnish Horticulture
<b>Finland</b>	Finnish Environment Institute
<b>Finland</b>	Potato Research Centre
<b>Finland</b>	Sugar Beet Research Centre
<b>Finland</b>	Helsinki University, Department of Forest Ecology
<b>France</b>	National institute for agronomical research: Plant health and environment department
<b>France</b>	National institute for agronomical research: ecology of forests, prairies, and aquatic environments
<b>France</b>	International centre for agricultural research and development
<b>Country</b>	<b>Provider name English</b>
<b>France</b>	National institute for agronomical research: Plant health and environment department

<b>France</b>	National institute for agronomical research: ecology of forests, prairies and aquatic environments
<b>France</b>	International centre for agricultural research and development
<b>Germany</b>	Federal Biological Research Centre for Agriculture and Forestry
<b>Germany</b>	Federal Agricultural Research Centre
<b>Germany</b>	Federal Centre for Breeding Research on Cultivated Plants
<b>Germany</b>	German Collection of Micro-organisms and Cell Cultures
<b>Germany</b>	Humboldt University Berlin, Faculty of Agriculture and Horticulture, Horticultural Economics
<b>Germany</b>	Humboldt University Berlin, Faculty of Agriculture and Horticulture
<b>Germany</b>	Technical University Carolo-Wilhelmina, Braunschweig, Institute of plant biology
<b>Germany</b>	J. W. Goethe-University, Frankfurt am Main, Institutes in Biosciences Department, Institute for Ecology, Evolution and Diver
<b>Germany</b>	Christian-Albrechts-Universität Kiel, Faculty of Agricultural and Nutritional Science
<b>Germany</b>	Georg-August-University of Göttingen, Department of Crop Sciences, Division of Plant Pathology and Vrop Protection
<b>Germany</b>	Brandenburgische Technische Universität Cottbus, Lehrstuhl Abfallwirtschaft
<b>Germany</b>	University of Hohenheim, Institute of Botany
<b>Germany</b>	University of Bonn, Phytomedicine, Institute of Crop Science and Resource Conservation
<b>Germany</b>	University of Rostock, Institute for Land use
<b>Germany</b>	Martin Luther University
<b>Germany</b>	Leibniz University Hannover, Institute of Plant Diseases and Plant Protection
<b>Germany</b>	Justus-Liebig-University Giessen, Institute of Phytopathology and Applied Zoology
<b>Germany</b>	LVWO
<b>Germany</b>	Geisenheim Research Centre
<b>Germany</b>	Institute of Vegetable and Ornamental Crops Großbeeren/Erfurt e.V.
<b>Germany</b>	LTZ
<b>Germany</b>	Plant Protection Service Mecklenburg-Western Pomerania
<b>Germany</b>	LALLF M-V
<b>Germany</b>	LfL
<b>Germany</b>	Plant Protection Service Hesse
<b>Germany</b>	Projektgruppe Biodiversität
<b>Germany</b>	Plant Protection Service North Rhine-Westphalia
<b>Germany</b>	Chamber of Agriculture Lower-Saxony
<b>Germany</b>	Plant Protection Service Saxony
<b>Germany</b>	BTL
<b>Germany</b>	Niedersächsische Forstliche Versuchsanstalt
<b>Ireland</b>	Galway-Mayo Institute of Technology
<b>Ireland</b>	University College Dublin
<b>Ireland</b>	University College Cork
<b>Ireland</b>	Agriculture and Food Development Authority
<b>Italy</b>	Council for the research and experimentation in agriculture
<b>Italy</b>	Ministry of University and Research

Netherlands	WUR-DLO: Plant Research International/ Applied Plant Research
Netherlands	Agricultural Economic Institute
Netherlands	WUR-DLO: Applied Plant Research
<b>Country</b>	<b>Provider name English</b>
Netherlands	WUR-DLO: Praktijkonderzoek Applied Plant Research/ Plant Research International
Netherlands	Keygene
Netherlands	BLGG
Netherlands	Dutch General Inspection Service for agricultural seed
Netherlands	Netherlands Inspection Service for Horticulture
Netherlands	Flowerbulb Inspection Service
Netherlands	Quality Control Bureau
Netherlands	Wageningen University
Netherlands	European Invertebrate Survey
Netherlands	WUR-DLO: Agriculture Economics Institute
Slovenia	Agricultural Institute of Slovenia
Slovenia	University in Ljubljana Biotechnical Faculty
Slovenia	National Institute of Biology
Spain	Spanish national research council
Spain	Research, education and coordination agricultural centre, Cantabria local government
Spain	Energy, environmental and technological research centre
Spain	Food and agricultural research and technological centre of Aragon
Spain	Forest technological centre of Catalonia
Spain	Canary institute of agrarian investigations
Spain	Madrilean institute of investigation and rural, agrarian and rural development
Spain	Institute Andalusia of investigation and agrarian, fishing, rural formation and of the ecological production
Spain	Murcia institute of investigation and agrarian and rural development
Spain	Institute of food and agrarian investigations and technology
Spain	Agrarian technological institute Castilla y Leon
Spain	Valencian institute of agrarian investigations
Spain	Research, education and technological agricultural service of Castilla-la Mancha
Spain	Basque institute of investigation rural development
Spain	Food and agriculture research and development regional service of Asturias
Spain	Agriculture and fisheries council of Illes Balears
Spain	Agriculture, ganadery and rural development council of Rioja
Spain	Technical Institute and of Agricultural Management
Spain	Environment council of Galicia.
Spain	A Coruña University
Spain	Alcalá University
Spain	Almería University
Spain	Barcelona University
Spain	Alicante University
Spain	Autónoma De Madrid University

Spain	Barcelona University
Spain	Burgos University
Spain	Cádiz University
<b>Country</b>	<b>Provider name English</b>
Spain	Cantabria University
Spain	Carlos III De Madrid University
Spain	Castilla-La Mancha University
Spain	Complutense De Madrid University
Spain	Córdoba University
Spain	Extremadura University
Spain	Girona University
Spain	Granada University
Spain	Huelva University
Spain	Illes Balears University
Spain	Andalucía Internacional University
Spain	Menéndez Pelayo Internacional University
Spain	Jaén University
Spain	Jaume I De Castellón University
Spain	La Laguna University
Spain	La Rioja University
Spain	Las Palmas De Gran Canaria University
Spain	León University
Spain	Lleida University
Spain	Málaga University
Spain	Miguel Hernández De Elche University
Spain	Murcia University
Spain	Oviedo University
Spain	Pablo De Olavide University
Spain	Polytechnical University of Cartagena
Spain	Polytechnical University of Catalunya
Spain	Polytechnical University of Madrid
Spain	Polytechnical University of Valencia
Spain	Pompeu Fabra University
Spain	Public University of Navarra
Spain	National Institute of Agricultural Research
Spain	Salamanca University
Spain	Universidad De Santiago De Compostela
Spain	Sevilla University
Spain	General Studies University of Valencia
Spain	Vigo University
Spain	Valladolid University
Spain	Zaragoza University
Switzerland	Federal Office for Agriculture
Switzerland	Swiss Federal Institute for Forest Snow and Landscape Research
Turkey	General Directorate of Agricultural Research
United Kingdom	Central Science Laboratory
United Kingdom	Stockbridge Technology Centre
United Kingdom	ADAS
United Kingdom	Forest Research
United Kingdom	Warwick HRI
United Kingdom	Cambridge University
United Kingdom	University of London, Imperial College
United Kingdom	East Malling Research

<b>United Kingdom</b>	Manchester University
<b>United Kingdom</b>	Reading University
<b>United Kingdom</b>	University of West of England
<b>Country</b>	<b>Provider name English</b>
<b>United Kingdom</b>	York University
<b>United Kingdom</b>	Rothamsted Research
<b>United Kingdom</b>	Nottingham University
<b>United Kingdom</b>	Edinburgh University
<b>United Kingdom</b>	Duchy College
<b>United Kingdom</b>	Scottish Crop Research Institute
<b>United Kingdom</b>	Scottish Agricultural College

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**Inventory of non-governmental stakeholders**

Country	Stakeholder name	Stakeholder name English
Austria	Bundesobstbauverband Österreichs	Austrian Federal Organisation of fruit growers
Austria	Bundesverband der Österreichischen Gärtner	Austrian Federal Organisation of Horticultural Growers
Austria	Landwirtschaftskammer Österreich	Austrian Chamber of Agriculture
Austria	Börse fuer landwirtschaftliche Produkte in Wien	Cooperation for agricultural products in Vienna
Belgium	Proefcentrum voor Sierteelt	Horticultural Experimental Centre
Belgium	Interprovinciaal proefcentrum voor de aardappelteelt	Inter provincial experimental station for potatoes
Belgium	Proefcentrum Fruit	Research Station Fruit
Denmark	Dansk Gartneri	Danish Market Garden
Denmark	Dansk Landbrugsrådgivning	Danish Agricultural Advisory Service
Denmark	Kartoffelafgiftsfonden	The Potato Levy Foundation
Finland	Kasvinsuojeluteollisuus ry	Finnish Crop Protection Association
Finland	Puutarhaliitto ry	Central Organisation for Finnish Horticulture
Finland	Maa- ja metsätaloustuottajain keskusliitto (MTK)	The Central Union of Agricultural Producers and Forest Owners (MTK)
France	Centre technique Interprofessionnel des Fruits et Légumes	Inter professional centre for fruits and vegetable
France	Etablissement National Technique pour l'amélioration de la viticulture	National technical laboratory fro the improvement of viticulture
France	fédération nationale des producteurs de plants de pommes de terre	National federation of producers of seed-potatoes
France	Arvalis Institut du végétal	Arvalis Institute of vegetals
France	Centre Technique Interprofessionnel des Fruits et Légumes	Inter professional centre for fruits and vegetables
France	Etablissement National Technique pour l'Amélioration de la Viticulture	National technical laboratory for the improvement of viticulture
France	Fédération national des producteurs de plants de pomme de terre	National federation of producers of seed potatoes
France	Arvalis - Institut du Végétal	Arvalis - Institute of vegetals
Germany	Zentralverband Gartenbau	
Germany	Bund Deutscher Baumschulen	
Germany	Bundesverband des Aussen- und Grosshandels mit Getreide, Ölsaaten,	Association of the German external trade in grains, animal feed, oilseeds and pulses
Germany	Bundesverband des Deutschen Exporthandels e.V	Federation of the German Export Trade
Germany	Bundesverband des Deutschen Groß- und Außenhandels e.V.	Federation of German Wholesale and Foreign Trade
Germany	Bundesverband Deutscher Fruchthandelsunternehmen e.V. (BVF)	
Germany	Bundesverband Deutscher Saatguterzeuger e.V. (BDS)	
Germany	Bundesvereinigung der Erzeugerorganisationen Obst und Gemüse e.V. (BVEO)	
Germany	Deutscher Fruchthandelsverband (DFHV)	German fruit trade association
Germany	Deutscher Hopfenwirtschaftsverband e.V. (DHWV)	
Germany	Deutscher Mälzerbund e.V	
Germany	Fachverband Deutsche Speisezwiebel e.V.	

Country	Stakeholder name	Stakeholder name english
Germany	Verband des deutschen Blumen-, Groß- und Importhandels (BGI) e.V.	
Germany	Zentralverband des Deutschen Kartoffelhandels e.V. (ZVK)	
Germany	Bund Deutscher Pflanzenzüchter (BDP)	
Germany	Gemeinschaft zur Förderung der privaten deutschen Pflanzenzüchtung (GFP)	
Germany	Bund Deutscher Staudengärtner (BdS)	
Germany	Bundesverband Zierpflanzen (BVZ)	
Germany	Berufsverband Agrar, Ernährung, Umwelt e. V. (VDL)	
Germany	Industrieverband Agrar (IVA)	
Germany	Arbeitsgemeinschaft industrieller Forschungsvereinigungen "Otto von Guericke" e.V. (AiF)	
Germany	Union zur Förderung von Oel- und Proteinpflanzen e. V. (UFOP)	
Germany	Deutscher Bauernverband e. V.	
Germany	Zentralverband Gartenbau	
Germany	Bund Deutscher Baumschulen	
Germany	Bundesverband des Aussen- und Grosshandels mit Getreide, Ölsaaten,	Association of the German external trade in grains, animal feed, oilseeds and pulses
Germany	Bundesverband des Deutschen Exporthandels e.V	Federation of the German Export Trade
Germany	Bundesverband des Deutschen Groß- und Außenhandels e.V.	Federation of German Wholesale and Foreign Trade
Germany	Bundesverband Deutscher Fruchthandelsunternehmen e.V. (BVF)	
Germany	Bundesverband Deutscher Saatguterzeuger e.V. (BDS)	
Germany	Bundesvereinigung der Erzeugerorganisationen Obst und Gemüse e.V. (BVEO)	
Germany	Deutscher Fruchthandelsverband (DFHV)	German fruit trade association
Germany	Deutscher Hopfenwirtschaftsverband e.V. (DHWV)	
Germany	Deutscher Mälzerbund e.V	
Germany	Fachverband Deutsche Speisezwiebel e.V.	
Germany	Gesamtverband Deutscher Holzhandel (BD Holz-VDH e.V.)	German Timber Trade Federation
Germany	Verband des deutschen Blumen-, Groß- und Importhandels (BGI) e.V.	
Netherlands	Nederlandse Algemene Keuringsdienst	Dutch General Inspection Service for Agriculture
Netherlands	stichting Nederlandse Algemene Kwaliteitsdienst Tuinbouw	Netherlands Inspection Service for Horticulture
Netherlands	BloembollenKeuringsDienst	Flowerbulb Inspection Service
Netherlands	Kwaliteits Controle Bureau voor groente en fruit	Quality Controle Bureau
Netherlands	Productschap Tuinbouw	Productgroup Horticulture
Netherlands	HoofdProductschap Akkerbouw	Head Productgroup Agriculture
Netherlands	Plantum NL	Plantum NL
Netherlands	HLB	HLB
Netherlands	Land- en Tuinbouw Organisatie	Dutch Farmers Union
Netherlands	Anthos	Anthos

<b>Country</b>	<b>Stakeholder name</b>	<b>Stakeholder name english</b>
<b>Netherlands</b>	HBAG bloemen en planten	HBAG flowers and plants
<b>Netherlands</b>	Nederlands Instituut voor de Afzetbevordering van Pootaardappelen	Netherlands Potato Consultative Foundation
<b>Netherlands</b>	Frugi Venta groenten en fruit handelsplatform	Frugi Venta fruit and vegetables
<b>Netherlands</b>	Productschap Margarine, Vetten en Olien	Product Board for Margarine, Fats and Oils
<b>Netherlands</b>	Nederlandse Algemene Keuringsdienst voor zaaizaad en pootgoed van landbouwgewassen	Dutch General Inspection Service for agricultural seed
<b>Slovenia</b>	Kmetijsko gozdarska zbornica Slovenije, Kmetijsko svetovalna služba	Agricultural Advisory Service
<b>Spain</b>		
<b>Switzerland</b>	CABI Biosciences	CABI Biosciences
<b>Turkey</b>	Ege Ihracatçı Birlikleri	Agean Exporters' Association
<b>Turkey</b>	Uludag Ihracatçı Birlikleri	Uludag Exporters' Association
<b>Turkey</b>	Akdeniz Ihracatçı Birlikleri	Mediterranean Exporters' Association
<b>United Kingdom</b>	Horticultural Trades Association	Horticultural Trades Association
<b>United Kingdom</b>	National Farmers' Union	National Farmers' Union
<b>United Kingdom</b>	Horticultural Development Council	Horticultural Development Council
<b>United Kingdom</b>	Royal Horticultural Society	Royal Horticultural Society
<b>United Kingdom</b>	Home-Grown Cereals Authority	Home-Grown Cereals Authority
<b>United Kingdom</b>	British Potato Council	British Potato Council
<b>United Kingdom</b>	British Potato Council	British Potato Council



Funder (country)	Topic	Existing needs	Priority reason	Comments
DGAI (FR)	To improve identification and detection techniques To improve PRA  To build 'technical platforms'  To promote training periods and information exchange between european labs in entomology	Building skills:expertise Building knowledge  Infrastructure  Building skills:expertise	Lack of robustness, of specificity for some analytical methods How to make PRA a reliable tool? To gather the actual infrastructure for an international access and to share 'heavy investments' The expertise of entomologists is essential in entomology, it has to be kept and maintained	
INRA (FR)	Improved detection  Improved identification  Validation of existing assays  Modeling of invasions  PRA Networking, joint use of expensive containment facilities	Building knowledge  Infrastructure  Building knowledge  Building knowledge  Building skills:expertise Infrastructure	Better, simpler and cheaper detection techniques are still needed We are losing experts and expertise, structured efforts are need here A lot of assays exist at lab level but are not validated and therefore not used. A validation effort is needed predictive capability is needed on possible outcome of an introduction PRA is still in its infancy. Can it be improved and become a reliable tool? Can quarantine lists be rationalized?	
FNPPPT (FR)	to improve knowledge on emerging /potential pests such as nematodes (Meloiodogyne), phytoplasma or potato wart (Synchytrium endobioticum)  to improve /develop detection methods on soil samples (DNA extraction, sampling,...) for (potato) bacteria and fungi  Studies on the consequences of climat changes on potato pathogens and the risk of developpement of non-european strains or diseases (bacteria, viruses,...) and developpement of adapted detection techniques	Building knowledge  Building knowledge  Building knowledge	Such diseases are present in some countries in Europe and could spread in the future if efficient preventive programmes are not developped Molecular techniques are not working well on soil samples due to the presence of inhibitors and uneven distribution of pathogens. Soil testing is useful to epidemiological studies, to evaluate the efficiency of control strategies or evaluate the infectious Warmer temperatures will favour pests and pathogens already present at the borders of Europe. The certification of seed potatoes will require to introduce these threats and to develop adapted detection procedures	
BBA (GE)	PRAs for specific pests  PRAs for pathways/development of PRAs e.g. for seeds  Contingency plans Disposal of bio waste and plant material contaminated with quarantine pathogens  Development of seed tests (e.g tomato)  Diagnostic methods for viroids/development of diagnostic methods for specific viroids (e.g. PSTVd) Management strategies for regulated pests which are difficult to control	Building knowledge  Building knowledge  Building knowledge Building knowledge  Building knowledge  Building knowledge Building knowledge	risk assessment is not available for a range of pests, policy advice is necessary risk assessment is not available for many pathways, policy advice is necessary contingency planning is not well developed at that stage. Consequences of a lack of contingency plans maybe high. Policy needs an advice in emergency situation. policy advice is necessary At the moment no sufficient methods of detection of pathogens in seeds e.g. for tomato are available. Diagnosis must be improved because the risk of introduction of pests via seeds might be high. Better policy advice is necessary. diagnosis of viroids are difficult and time-consuming at the moment. Simple and efficient methods are required for be safer detection and identification of viroids	
DAF (IR)	Eradication Programmes Modelling the economic and environmental costs of spread of pest and disease Modelling the impact of climate change on the distribution of quarantine pests and disease	Building knowledge Building knowledge Building knowledge	Prevention of spread of quarantine organisms For comparison of the cost of control Need to upscale our phytosanitary resources	
MPA F (IT)	Development of new diagnostic methods and infrastructures in support of plant health Development of detection methodologies for quarantine plant pests and pathogens for use by Plant Health Inspection Services Definition of standard diagnosis methods at EU level Study on quarantine pathogen variability based on genomic analysis to optimize diagnostic protocols Organisation of ring tests Impact of climatic changes on insects of agricultural concern Institution of a standing training system for officers of Plant Health Inspection Services of borderland Genetic characterization of phytophagous insects	Building knowledge  Building knowledge Building knowledge Building knowledge Building knowledge Building knowledge Building knowledge Building knowledge		
MAAF (SLO)	PRA science  Detection methods for quarantine pests/pathogens Building up information networks on invasive pests and diseases in Europe	Building skills:expertise  Building skills:expertise Infrastructure	need better methodology for risk assessment, especially integration of socio-economic environmental impact Need rapid, reliable, easy to use detection methods for use by inspection services to detect quarantine pests/pathogens at point of entry: acoustic methods; volatiles; pheromone traps; LFDS; etc.	

Funder (country)	Topic	Existing needs	Priority reason	Comments
MAAF (SLO) INA (SP)	Management strategies for pests which are subject to phytosanitary regulations and which are difficult to control	Building knowledge	Many pests are difficult to eradicate/contain due to pesticide resistance, limited availability of pesticides, or constraints imposed by cropping practices;	
	PRA Diagnosis of quarantine and emerging diseases Alternative control methods to chemicals	Building skills&expertise Building skills&expertise Building skills&expertise	Prevention Prevention Lack of active ingredients in some mediterranean crops	Directive 91/4141 restrictions
FOAG (SW)	Diabrotica virgifera	Building skills&expertise	many european countries develop strategies to manage this pest.	joint research exploring synergies already take place but could be fostered.
	Phytophthora ramorum	Building skills&expertise	similar problems faced in many european countries, stop the spread of this disease	great potential for synergies in research
	Management procedure of import control	Infrastructure	avoid duplication of efforts, explore synergies, complementarities much efforts in Switzerland to avoid further spread of this disease	make best use of existing resources/infrastructure streamlining research efforts in different countries
GDAR (TU)	Fireblight	Building knowledge		
	Advanced Diagnostics methods for specific pests/pathogens	Building skills&expertise		
	Diagnostic ring testing, including validation principles	Building knowledge		
	Seed tests for regulated pests/pathogens	Building skills&expertise		
	DNA-based sequencing methods and infrastructures	Building knowledge		
	Developing sampling methods	Building knowledge		
	Development of PRA science	Building skills&expertise		
	Identify, obtain, validate datasets for PRA	Building skills&expertise		
DEFRA (UK)	Support for 3rd country exporting plants to EU	Building knowledge		
	Management/disposal of plant material contaminated with Quarantine pathogens	Building knowledge		
	Management strategies for regulated pests which are difficult to control	Building knowledge		
	PRA science	Building skills&expertise	Need better methodology for risk assessment, especially integration of socio-economic environmental impact	
	Detection methods for quarantine pests/pathogens	Building skills&expertise	Need rapid, reliable, easy to use detection methods for use by inspection services to detect quarantine pests/pathogens at point of entry: acoustic methods; volatiles; pheromone traps; LFDs; etc.	
	DNA barcoding methods and infrastructures	Infrastructure	Developing sequence data for quarantine pests/pathogens and related species and putting into an usable infrastructure for use by all MAS diagnostic laboratories	
	Management strategies for pests which are subject to phytosanitary regulations and which are difficult to control	Building knowledge	Many pests are difficult to eradicate/contain due to pesticide resistance, limited availability of pesticides, or constraints imposed by cropping practices; suitable alternatives to MeBr might also be an area for further collaboration though there have been	
Development of management options for the treatment of biodegradable waste and renewable raw material contaminated with pests of phytosanitary concern	Building knowledge	Safe, environmentally friendly disposal of quarantine waste is a growing issue due to reduction in the number of existing disposal methods due to environmental legislation		
Developing system approaches to pest risk management to enhance the effectiveness of plant health policy	Building skills&expertise	Better targeting of surveillance/monitoring and better evaluation of policy		
Diagnostic 'chip'	Building skills&expertise	Diagnostic chips for all quarantine pests, or by commodity		
Integrating existing informatics systems in support of Plant Health	Infrastructure	Need an EU-wide informatics system that covers reference standards (cultures type material/symptoms/morphological descriptions/etc), identification keys, databases, photographs and text resources for harmful organisms, reference material, GIS, e-training		



## **ANNEX 8: Questionnaire for non-partner countries**

This questionnaire was filled in by countries outside of the EUPHRESKO consortium in July August 2007

### **I Information on public bodies who fund and/or manage phytosanitary research in your own country:**

#### **1. Name of the body:**

Acronym:

Full Name:

Translation in English:

#### **2. Person completing the questionnaire: Name:**

Telephone:

Email:

#### **3. Address of the person completing the questionnaire: Address:**

City:

Post Code:

Country:

#### **4. Financing and managing programmes: Are you a Ministry with full responsibility for financing research activities carried out at national or regional level for the programme?**

#### **5. Financing and managing programmes: Are you a Ministry with full responsibility for managing research activities carried out at national or regional level for the programme?**

#### **6. Financing and managing programmes: Are you a national or regional organisation/public body that finances research activities, e.g. agencies funding research on behalf of a ministry?**

Who is the organisation mandating research?

Supervisor title?

Supervisor name?

Name translation in English?

Role of supervisor? Financial provider Thematic Research

Programme Management Other: Explain

#### **7. Financing and managing programmes: Are you a national or regional organisation/public body that manages research activities, e.g. agencies managing research on behalf of a ministry?**

Who is the organisation mandating research?

Supervisor title?

Supervisor name?

Name translation in English?

Role of supervisor? Financial provider Thematic Research

Programme Management Other: Explain

#### **8. Name of the ongoing funded phytosanitary programme(s):**

(If no name, please find an identification)

#### **9. Any comments or additional information to clarify about questions 1 to 8 if needed:**

## II Programme information

### 1. Name of the main funder (institution providing funds):

Funder Name:

Is the Programme joint-funded with other funders (this refers to the Programme, not co-funding of some Projects within a Programme):

name of the co-funding institution/agency:

Country:

Comments if needed:

### 2. Name of the programme manager:

Contact Name:

Contact E-Mail:

Contact Address:

### 3. Programme Details: It is a national/regional phytosanitary programme (choose)

### 4. Programme Details: It is a discrete phytosanitary programme part of a larger general programme

Overall budget of the larger general programme? in Euros

How much (in %) of the overall budget does the phytosanitary part represent?

### 5. Budget of the phytosanitary research programme for the current annual cycle in Euros?

Full cost, including salaries and taxes. in 2007

When does your budget/financial year start? in 2007

What is your minimum time it would take to make funds available for future trans-national activities (in weeks)?

Comments if needed:

### 6. Budget of the phytosanitary research programme for the previous & next annual cycle in Euros? Full cost, including salaries and taxes in next year (2008)

In Euros? in previous year (2006)

Comments if needed:

### 7. Period/duration of the programme Total duration in months:

Start year (yyyy):

End year (yyyy): enter 0 for ongoing

Comments if needed:

### 8. What is the balance of funds between competitive and non-competitive research?

Comments if needed:

### 9. What is the research balance of the programme? (type of research in % of the total budget) % basic/fundamental research?

% applied research/experimental development?

Any Comments?

**10. Please provide your programme objectives?**

Attach a document?

**13. Does the programme involve collaboration with other phytosanitary programme(s) in your country? Yes/no:**

**14. Does the programme involve collaboration with other phytosanitary programme(s) in other country(s)? Yes/no**

Comments if needed:

**15. Detailed information about the programme:** describe the current projects within the programme

**III. Priorities for future joint activities**

1. Prioritise between 3 and 5 that are research priorities in your country and explain why they are priorities Please explain why these suggested topics are research priorities

Topic:

Existing needs (Building knowledge/skills expertise / infrastructure) :

Priority reason:

Comments:

**ANNEX 9: Current projects in national phytosanitary programmes of EUPHRESCO non-partners.**

Partner	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines
Ukraine	Pest Risk Analysis for <i>Dendrolimus superans</i> , <i>Erschoviella musculana</i> , <i>Amorpha fruticosa</i> , <i>Baccharis halimifolia</i> , <i>Buddleja</i>	06/01/2007	12/01/2007		<i>Dendrolimus superans</i> , <i>Erschoviella musculana</i> , <i>Amorpha fruticosa</i> , <i>Baccharis halimifolia</i> , <i>Buddleja davidii</i> , <i>Carpobrotus</i>	Entomology Invasive alien plants
Ukraine	Pest Risk Analysis for <i>Plasmodium halstedii</i> , <i>Phytophthora ramorum</i> , <i>Homalodisca coagulata</i> , <i>Lymantria mathura</i> , <i>Carpobrotus edulis</i> , <i>Cenchrus incertus</i> .	06/01/2007	12/01/2007		<i>Plasmodium halstedii</i> , <i>Phytophthora ramorum</i> , <i>Homalodisca coagulata</i> , <i>Lymantria mathura</i> , <i>Carpobrotus edulis</i> , <i>Cenchrus incertus</i> .	Entomology Mycology Invasive alien plants
Ukraine	Establishment of pests not widely distributed in the northern Ukraine (Polissia)	05/01/2007	11/01/2007	Environmental related	<i>Hyphantria cunea</i> Drury, <i>Mycosphaerella linicola</i> Naumov, <i>Synchytrium endobioticum</i> (Schilbersky) Percival, Beet necrotic yellow v	Entomology Nematology Mycology Virology Invasive alien plants
Ukraine	Distribution of pests not widely spread in the western part of Ukraine	07/01/2007	11/01/2007	Environmental related	<i>Hyphantria cunea</i> Drury, <i>Mycosphaerella linicola</i> Naumov, <i>Synchytrium endobioticum</i> (Schilbersky) Percival, Beet necrotic yellow v	Entomology Nematology Bacteriology Mycology Virology Invasive alien plants
Ukraine	Establishment of pests not widely distributed in the southern part Ukraine (Step)	04/01/2007	11/01/2007	Environmental related	<i>Hyphantria cunea</i> Drury, <i>Phthorimaea operculella</i> Zell., Plum pox potyvirus, <i>Globodera rostochiensis</i> (Wollenweber) Behrens, Ambro	Entomology Nematology Virology Invasive alien plants
Ukraine	Probability of spread and economic consequences of pests not widely distributed in the southern part of Ukraine (Step)	04/01/2007	11/01/2007	Socio-economic level	<i>Hyphantria cunea</i> Drury, <i>Phthorimaea operculella</i> Zell., Plum pox potyvirus, <i>Globodera rostochiensis</i> (Wollenweber) Behrens, Ambro	Entomology Nematology Virology Invasive alien plants
Ukraine	Spreading rate of pests not widely distributed in the central Ukraine (Lisostep)	05/01/2007	11/01/2007	Environmental related	<i>Hyphantria cunea</i> Drury, <i>Synchytrium endobioticum</i> (Schilbersky) Percival, Beet necrotic yellow vein furovirus, <i>Globodera rostoch</i>	Entomology Nematology Mycology Virology Invasive alien plants
Ukraine	Establishment of pests not widely distributed in the central Ukraine (Lisostep)	05/01/2007	11/01/2007	Environmental related	<i>Hyphantria cunea</i> Drury, <i>Synchytrium endobioticum</i> (Schilbersky) Percival, Beet necrotic yellow vein furovirus, <i>Globodera rostoch</i>	Entomology Nematology Mycology Virology Invasive alien plants
Ukraine	Biology, distribution, economic consequences, diagnostics of <i>Puccinia horiana</i> P. Hennings in regulated articles in Ukraine	08/01/2007	11/01/2007	Environmental related	<i>Puccinia horiana</i> P. Hennings	Mycology
Ukraine	Detection of potato cyst nematodes population density and usage of nematode resistant potato cultivars	06/01/2007	11/01/2007	Agricultural/horticultural related	<i>Globodera rostochiensis</i> (Wollenweber) Behrens	Nematology
Ukraine	Phylogenetic activity determination of invasive species in the southern Ukraine (Step)	06/01/2007	12/01/2007	Environmental related		Invasive alien plants
Ukraine	National survey for <i>Solidago gigantela</i> L., <i>Solidago canadensis</i> L., <i>Ambrosia trifida</i> L., <i>Ipomea hederaceae</i> L., <i>Oenothera lacinata</i> H.	06/01/2007	12/01/2007	Environmental related	<i>Solidago gigantela</i> L., <i>Solidago canadensis</i> L., <i>Ambrosia trifida</i> L., <i>Ipomea hederaceae</i> L., <i>Oenothera lacinata</i> H.	Invasive alien plants
Ukraine	Pictorial identification keys for annual weed seeds	05/01/2007	11/01/2007	Expertise related		
Ukraine	Pictorial identification keys for perennial weed seeds	06/01/2007	11/01/2007	Expertise related		
Ukraine	Forest phytosanitary monitoring (Zakarpatska oblast) and methods development	06/01/2007	11/01/2007	Forestry related	species from Ukrainian list of regulated pests	Entomology Nematology Bacteriology Mycology Virology Invasive alien plants
Ukraine	Forest phytosanitary monitoring (Zhytomirskia oblast) and methods development	04/01/2007	11/01/2007	Forestry related	species from Ukrainian list of regulated pests	Entomology Nematology Bacteriology Mycology Virology Invasive alien plants
Ukraine	Biology and distribution of <i>Ralstonia solanacearum</i> (Smith) Yabuuchi et al in Ukraine	05/01/2007	11/01/2007	Environmental related	<i>Ralstonia solanacearum</i> (Smith) Yabuuchi et al	Bacteriology
Ukraine	Potato breeding material screening for resistance against <i>Synchytrium endobioticum</i> (Schilbersky) Percival	05/01/2007	11/01/2007	Expertise related	<i>Synchytrium endobioticum</i> (Schilbersky) Percival	Mycology

Partner	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines
Ukraine	Methods development for storage pests detection and identification	04/01/2007	11/01/2007	Expertise related		Entomology
Ukraine	Methods development for storage pests eradication and containment	04/01/2007	11/01/2007	Agricultural/horticultural related	species from Ukrainian list of regulated pests	Entomology Bacteriology Virology
Ukraine	Horticultural crop phytosanitary monitoring	07/01/2007	11/01/2007	Agricultural/horticultural related		Erwinia amylovora (Burrill) Winslow et al., Plum pox potyvirus
Ukraine	Puccinia horiana P. Hennings reference - collection foundation	06/01/2007	11/01/2007	Expertise related	Puccinia horiana P. Hennings	Mycology
Ukraine	Regulated insects (A1 List) reference collection foundation	05/01/2007	12/01/2007	Expertise related	Regulated insects from A1 National List (59 species)	Entomology
Ukraine	Regulated insects (A2 List, RNQP List) reference collections establishment	05/01/2007	12/01/2007	Expertise related	Regulated insects from A2 and RNQP National Lists	Entomology
Ukraine	Weed management system on cucurbits (the Cucurbitaceae family)	05/01/2007	11/01/2007	Agricultural/horticultural related	Cenchruspauciflorus Benth.	weed
Ukraine	Phyllaphora ambrosiae as a biological control agent against Ambrosia artemisiifolia	06/01/2007	12/01/2007		Ambrosia artemisiifolia	weed
Ukraine	Pests monitoring system for flowers crop	06/01/2007	11/01/2007		regulated pests from National Lists	Entomology Nematology Bacteriology Mycology Virology Invasive alien plants
Ukraine	Grass complex in Ambrosia artemisiifolia management system	06/01/2007	11/01/2007	Environmental related	Ambrosia artemisiifolia	weed
Poland	Monitoring of Diabrotica virgifera on sweetcorn in Poland.	01/01/2007	12/01/2011	Agricultural/horticultural related	Diabrotica virgifera	Entomology
Poland	Monitoring of changes in pathogenicity in populations of Clavibacter michiganensis ssp. sepedonicus (ring rot of potato), and Ralstonia solanacearum (brown rot of potato)	01/01/2008	12/01/2013	Agricultural/horticultural related	Clavibacter michiganensis, Ralstonia solanacearum	Bacteriology
Poland	Monitoring of changes in Globodera rostochiensis and G. pallida populations □ quarantine pests of potato.	01/01/2008	12/01/2013	Agricultural/horticultural related	Globodera rostochiensis, Globodera pallida	Nematology
Poland	Monitoring of occurrence of new, aggressive Synchytrium endobioticum pathotypes including possibility of detection new virulence factors in pathogen populations present in Poland.	01/01/2008	12/01/2013		Synchytrium endobioticum	Mycology
Poland	Detection and identification of quarantine nematodes and those subject to statutory control in fruit and ornamental plants, determination of their occurrence on the territory of Poland and prevention of their spread.	01/01/2007	12/01/2011	Agricultural/horticultural related		Nematology
Poland	Determination of a risk connected with invasive species and those subject to statutory control in fruit and ornamental crops and development of control methods	01/01/2007	12/01/2011	Agricultural/horticultural related		Invasive alien plants
Poland	Diagnostics and population variability of the bacterium Erwinia amylovora, the causal agent of a fire blight.	01/01/2007	12/01/2011	Agricultural/horticultural related	Erwinia amylovora	Bacteriology
Poland	Monitoring of the occurrence and development of spread prevention methods of new harmful pathogenic fungi on berry plants crops	01/01/2007	12/01/2011	Agricultural/horticultural related		Mycology
Poland	Monitoring of Phytophthora spp., diagnostics and possibilities of reducing losses caused by this group of pathogens	01/01/2007	12/01/2011	Agricultural/horticultural related	Phytophthora spp	Mycology
Poland	Obtaining of an elite nursery material of fruit plants free from viruses, phytoplasmas and viroids.	01/01/2007	12/01/2011	Environmental related		Virology
Poland	Assessment of the usefulness of available methods of taxonomic identification of a quarantine pine wood nematode (Bursaphelenchus xylophilus).	01/01/2006	12/01/2010	Agricultural/horticultural related	Bursaphelenchus xylophilus	Nematology
Poland	Development of control programs for Diabrotica virgifera in Poland.	01/01/2006	12/01/2010	Agricultural/horticultural related	Diabrotica virgifera	Entomology

Partner	Project Name	Start Date	End Date	Objective Areas	Scientific Name	Disciplines
Estonia	Construction of environmentally safe plant virus vectors	01/01/2004	12/01/2007			Virology
Estonia	Biogeography and autecology of Thelephorales (Basidiomycota, Fungi)	01/01/2006	12/01/2009			Mycology
Estonia	Delayed effects of sublethal doses of natural insecticides on pest and beneficial insects	01/01/2006	12/01/2009	Agricultural/horticultural related		Entomology
Estonia	Animal-caused disturbances and their consequences in forest ecosystems	01/01/2005	12/01/2008	Forestry related		Entomology Mycology
Estonia	Biological control of pine weevils ( <i>Hylobius</i> spp.) in forestry	01/01/2006	12/01/2009	Forestry related	<i>Hylobius</i> spp.	Entomology
Estonia	Phenotypic and genotypic characterisation of Estonian populations of <i>Phytophthora infestans</i> ; epidemiology of potato late blight	01/01/2005	12/01/2008	Agricultural/horticultural related	<i>Phytophthora infestans</i>	Mycology
Estonia	The effects of food plants and microsporidiosis ( <i>Microsporidia</i> , <i>Nosematidae</i> ) on development and overwintering physiology of insect pests on vegetable crops	01/01/2007	12/01/2010	Agricultural/horticultural related		Entomology
Estonia	EFFECT OF EXTERNAL STIMULI TO THE RESPONSES OF ANTENNAL SENSILLA AND SEARCHING BEHAVIOUR OF GROUND BEETLES AND CLICK BEETLES (COLEOPTERA: CARABIDAE, ELATERIDAE)	01/01/2007	12/01/2010	Agricultural/horticultural related	Carabidae, Elateridae	Entomology
Estonia	Breeding of scab-resistant apple varieties	01/01/2000	12/01/2007	Agricultural/horticultural related	<i>Ventura</i> spp.	Mycology Plant variety breeding
Estonia	Upgrading of the plant protection in fruit production and comparative research in conventional and organic farming	01/01/2003	12/01/2007	Agricultural/horticultural related		Entomology All pests and diseases present in fruit production
Estonia	Restriction of cruciferous pests and favouring of beneficial insects in the development of ecological-economical cultivating technologies of oil-seed crops	01/01/2003	12/01/2007	Agricultural/horticultural related	All pests of cruciferous crops	All pests of cruciferous crops
Estonia	The studies of plant biotechnology methods on eradication and propagation of plant breeding and seed production material of potato and horticultural crops	01/01/2003	12/01/2007	Agricultural/horticultural related		All pests
Estonia	The moulds affecting on the quality and safety of the Estonian grain and reduction of their unfavourable influence	01/01/2006	12/01/2010	Agricultural/horticultural related		Mycology
Estonia	Taxonomy, molecular phylogenetic and ecological studies of basidio- and ascomycetes (including lichenized fungi)	01/01/2003	12/01/2007			Mycology Entomology
Estonia	The application of plant biotechnology methods in the research of potentially dangerous plant diseases and of long-term preservation of plant genetic resources	01/01/2003	12/01/2007	Agricultural/horticultural related		Nematology Bacteriology Mycology Phytoplasmas Virology
Estonia	Autecology and taxonomy of fungal plant root symbionts and pathogens important for the agriculture and forestry.	01/01/2003	12/01/2007	Agricultural/horticultural related		Mycology
Estonia	Expression and function of plant and plant virus genes	01/01/2003	12/01/2007			Virology
Estonia	Development of environmentally friendly plant protection II	01/01/2004	12/01/2008	Agricultural/horticultural related		Entomology
Hungary	In vitro virus-elimination in stone fruit and ornamental plants	01/01/2005	12/01/2007	Agricultural/horticultural related	Plum pox virus, Prunus necrotic ringspot virus, European stone fruit yellows phytoplasma, Chrysanthemum stunt viroid	Virology
Hungary	Decreasing airborne pollen concentration of ragweed using environmentally friendly technologies	01/01/2005	12/01/2007	Agricultural/horticultural related	<i>Ambrosia artemisiifolia</i>	Invasive alien plants
Hungary	Molecular identification of <i>Phytophthora</i> species affecting forestry trees	01/01/2005	12/01/2007	Forestry related	<i>Phytophthora alni</i>	Mycology
Hungary	Overall studies for solving the problems of stolbur disease and endangering potato industry	11/01/2005	10/01/2008	Agricultural/horticultural related	Potato stolbur phytoplasma	Phytoplasmas
Hungary	The development of infrastructure promoting the effectiveness of raspberry growing and marketability and of new varieties	01/01/2006	09/01/2008	Agricultural/horticultural related	<i>Resseliella theobaldi</i>	Entomology

**ANNEX 10: List of studied organisms mentioned in non-partner countries' research projects.**

Bacteriology	Phytoplasma	Mycology	Entomology	Nematology	Virology	Invasive species
Clavibacter michiganensis sepedonicus	Europ.S.F.Y.	Mycosphaerella linicola	Dendrolimus superans	Bursaphelenchus xylophilus	Beet Necrotic Yellow Virus	Ambrosia artemisiae
Erwinia amylovora	Stolbur	Phytophthora ramorum	Diabrotica virgifera virgifera	Globodera rostochiensis	BRSV	Ambrosia trifida
Ralstonia solanacearum		Phytophthora spp	Erschoviella musculana	Globodera pallida	Chrysanthemum Stunt Viroïd	Amorpha fruticosa
		Phytophthora alni	Homaladisca coagulata		CLSV	Baccharis hamilifolia
		Phytophthora infestans	Hylobius spp		Pepino mosaïc V	Budleija dvidii
		Plasmopara halstedii	Hyphantria cunea		Plum Pox	Carpobrutus edulis
		Puccinia horiana	Lymantria mathura		PNRV	Cenchrus incertus
		Synchytrium endobioticum	Phtorimea operculella		TBRV	Ipomea heredacea
		Venturia inaequalis	Reseliella theobaldi		ZYMV	Oenothera laciniata
						Solidago canadensis

**ANNEX 11: Research priorities from non-partner countries.**

Country	Order	Topic	Existing needs	Priority reason
Estonia	1	Development of a Nordic/Baltic warning system for new pests, diseases and invasive species caused by climate change and global trade	Building knowledge	It is important to have a warning system covering an area with similar climate conditions to be on time prepared for the spread new harmful organisms.
Estonia	2	Research in support of developing Pest Risk Analysis (PRA) and Pest Risk Management (PRM) for regulated or emerging pests.	Building skills/expertise	Estonia is missing scientific research on the field of PRA and PRM, but these are the basis for listing and managing pests.
Estonia	3	Inventory of bacterial, viral and nematode pests in spread in Estonia	Building knowledge	To have an overview of pests present in Estonia. At the moment these specialities have been more on the background in Estonia.
Estonia	4	Development and implementation of IT based decision support system for integrated control of emerging pests	Infrastructure	To control pests and diseases effectively, on time and using integrated control methods to be more environment friendly.
Estonia	5	PRA of harmful forest and wood pest listed in the directive 2000/29/EC: to evaluate the possibility of these pests to adapt in Estonia and damage Estonian forests.	Building knowledge	As 50 % of Estonia is covered with forest, it is vital for Estonian economy and environment to safeguard our forests.
Hungary	1	Development and validation of control/management approaches for <i>Diabrotica virgifera virgifera</i> , LeConte	Building knowledge	quick spreading and heavy crop losses
Hungary	2	Development and the validation of survey, monitoring for <i>Helicoverpa armigera</i> Hbn. and elaboration of complex protection programme against the pest	Building knowledge	important crop losses in many crops
Hungary	3	Studying life cycle and parasites of <i>Rhagoletis cingulata</i> Loew in order to elaborate effective control of the pest	Building skills/expertise	emerging pest - quick spread and heavy crop losses
Hungary	4	Development and validation of complex plant protection systems in organic horticultural farming with special attention to regulated pests	Building knowledge	practical, everyday problem in organic farming
Hungary	5	Development and the validation of diagnostic methods for regulated virus diseases of small fruits □ comparative study of biological indexing and laboratory methods	Building knowledge	the currently proposed molecular laboratory detection methods give exact yes/no answers only in a limited cases but on the other hand the interpretation of biological indexing is not exact enough
Morocco	1		Building skills/expertise	
Morocco	2		Infrastructure	
Ukraine	1	Methods development on general and selective inspection of consignments	Building skills/expertise	Such methods will help to increase efficacy of phytosanitary inspection, especial at border - entry points
Ukraine	2	Regulated non-quarantine pests - application of the concept	Building knowledge	There are currently problems with National List preparation, certification schemes and regulated experience
Ukraine	3	Establishment of the ring - test and proficiency test systems for quarantine laboratories	Building skills/expertise	At the moment such systems not in use