

SAFEFOODERA Call for proposal Guide for applicants

Printable document

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Please see www.safefoodera.net for full Guide for applicants

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Annex 1: Guideline for 6 month status report.

Annex 2: Guideline for reporting

CALL FOR PROPOSAL

SAFEFOODERA has now launched its second transnational call on the following topics concerning food safety:

- [DETECTION OF TRACES OF ALLERGENS IN FOOD](#)
- [BIOACTIVE INGREDIENTS](#): Safety of bioactive ingredients in functional foods
- [CHEMICAL FOOD CONTAMINANTS](#)
- [EMERGING RISK](#): Effects [Consequences] of climate change on [for] feed and food safety
- [GMO](#): Development of screening methods of GMO
- [MRSA](#): The zoonotic potential of methicillin-resistant Staphylococcus aureus (MRSA) – antibiotic resistance and non-typable (NT) strains
- [RISK-BENEFIT ANALYSIS](#)
- [RISK ASSESSMENT OF FOOD-BORNE PATHOGENS](#)
- [TRACEABILITY](#)

SAFEFOODERA invites applicants, such as researchers and research institutions, public/private bodies/companies, industry organisations and public authorities to submit project proposals.

DEADLINE FOR PROPOSAL SUBMISSION: **15th of September 2008**

The maximum duration of the projects will be 2 years. The total budget of the call is 5.587K €. The projects will be financed according to two financial models: [common pot and distributed pot](#).

This transnational call is part of a continuing programme to help the SAFEFOODERA consortium to better organize and run transnational programmes (potentially with larger number of funding countries and topics and with larger budgets).

The SAFEFOODERA project is an initiative funded by the 6th R&D EU Framework Programme, under the ERA-NET scheme, in which 26 countries/regions are participating. The primary objective is to establish a European platform for research aimed at protecting consumers against health risks from the consumption of food through a co-ordination action ERA-NET of 18 Member States, 2 Associated Countries and 3 regional organisations representing in total 480 million European citizens.

Participating Countries and Regions in the SAFEFOODERA 2nd Call

[The Nordic Region](#): [Nordic Innovation Centre](#) (NICe) acts as facilitator and coordinator of the call

[Basque Country](#)

[Cyprus](#)

[Czech Republic](#)

[Finland](#)

[Germany](#)

[Iceland](#)

[The Netherlands](#)

[Norway](#)

[Portugal](#)

[Slovenia](#)

[UK](#)

TIME SCHEDULE

20th of June 2008: SAFEFOODERA 2nd Call officially announced

15th of September 2008: Deadline for proposal submission (17:00 Brussels time)

1st of March 2009: Latest date for project start

CALL REQUIREMENTS

The SAFEFOODERA 2nd Call covers subjects for the food sector which aim to improve safety, health and wellbeing for the consumer.

The proposal language is English.

For projects in the topic funded by the [common pot](#), common rules for participation described in this call text apply.

For projects in the topics funded by [distributed pots](#), besides the common rules described in this call text, specific additional national requirements may apply. Please see text under each topic.

In developing a proposal it is important that not only the project coordinator, but every partner in the consortium is in direct contact with the [national/regional contact person](#) to ensure compliance and eligibility with the national/regional rules regarding the proposal submission, funding and reporting, and to obtain advice for modifications if necessary.

TYPE OF PROJECTS

- The project proposals must be transnational
- The project must address issue(s) outlined in one of the topics descriptions. Each proposal may only answer to and will only be evaluated in one topic category. There is no extra benefit from combining several topics in one proposal
- Projects duration is to be specified by the applicants and consistent with achieving the aims and objectives of the proposal. Maximum duration is two years
- The aim is to fund projects focusing on an applied approach or having a strategic nature

CONSORTIA COMPOSITION

- Each project must select a project coordinator to act as consortium leader and manager
- The minimal requirement is participation of research partners from at least 2 different participating countries/regions in the call topic (see specification under national/regional requirements)
- Partners can be research facilities of any type from the public or private sector (academia, companies/industry, research centres, public sector laboratories etc.)
- If the knowledge necessary to carry out the project is not available in the countries/regions participating in the topic, partners from other countries may be involved in the project. They will normally not receive direct funding unless one of the national/regional funders is willing to do so
- Subcontractors can be included and may participate in accordance with the national/regional funding regulations
- A [consortium agreement](#) is required for all projects. This agreement must describe how the R&D and innovation work of the project is to be divided between the project participants. An evenly and broadly distribution of work is required. Each partner is expected to play a significant role in the project.
- [Distributed pot](#): Partners from the participating funding regions and countries can be involved in the consortia, and may receive funding from national/regional sources according to national/regional rules
- [Common pot](#): Partners from the participating regions/countries can be involved in the consortia, and may receive funding.

APPLICATION PROCEDURE

In developing a proposal it is important that not only the project coordinator, but every partner in the consortium is in direct contact with the national/regional contact person to ensure compliance and eligibility with the national/regional rules regarding the proposal submission, funding and reporting, and to obtain advice for modifications if necessary.

Proposal submission:

Project proposal is to be submitted through the online [proposal form](#) to the Nordic Innovation Centre by the consortium coordinator. Some funders require additional schemes. See under each [national/regional organisation](#).

Only proposals submitted by September 15th 2008, 17:00 Brussels time will be accepted for evaluation. Proposals must be written in English.

An e-mail confirming the correct submission of the proposal will be sent within 1 week to the project coordinator. If there is any information provided in the application which is considered confidential, this should be clearly indicated together with a brief statement of the reason. Alternatively, applicants could provide confidential information in a separate cross referenced annex to the application.

Evaluation

The proposals will be evaluated following the SAFEFOODERA evaluation criteria:

- Relevance according to the call (objectives, transnational synergies and complementarities)
- Quality of the total project work plan (including deliverables and milestones)
- Scientific and innovative quality (including description of state of the art, methodology,...)
- Organisational management and project feasibility
- Communication plan, Success criteria, Plan for follow up of project results

The results of the evaluation will be provided to the project coordinator who is responsible for disseminating them to the consortium members.

Project selection procedure

| | Distributed Pot | Common Pot |
|---|---|--|
| Applications received | <ul style="list-style-type: none"> • Received by NICE through online application form • When required, additional application forms received by the national agencies | <ul style="list-style-type: none"> • Received by NICE through online application form |
| Formal eligibility check <ul style="list-style-type: none"> • Performed by NICE | <ul style="list-style-type: none"> • Eligibility of proposal (successful submission, within deadlines, appropriate use of application form etc) • Applications that are rejected at this stage will not be sent to TFG for pre-evaluation • The application are sent from NICE to involved national/regional Funders after formal eligibility check | |
| Pre-evaluation <ul style="list-style-type: none"> • Performed by Funders | <ul style="list-style-type: none"> • Project Pre- and Summary Evaluation Report is filled out for each proposal, based on the following criteria: <ul style="list-style-type: none"> - National/regional partner eligibility - Call relevance according to national/regional relevance, objectives, strategies and priorities • Result after pre-evaluation is either Yes or No. If No, a description of why the project is rejected must be filled into the Project Evaluation Form. The Project Evaluation Form will be sent to the project coordinator when the evaluation process is finalized. • Projects that do not meet the national/regional criteria are rejected at this stage | |
| Expert evaluation | <ul style="list-style-type: none"> • The Panel of Independent Experts (PIE) is nominated by TFG. One expert for each topic the funding organisation funds. PIE performs the evaluation according to the call criteria and includes | |

| | | |
|----------------------------------|---|--|
| | the pre-evaluation reports in the work. One consensus report is prepared for each topic. NICE administrates the PIE. | |
| Funding recommendation | <ul style="list-style-type: none"> • TFG meet to agree on a funding recommendation based on the Project Evaluation Report and available budget. In the case projects are equal ranked the national/regional countries participating would have the priority. • The recommendation (selected/not selected) is added to the Project Evaluation Report | |
| Funding decision | Done nationally/regionally by authorized body. | Approved at nationally/regionally by authorized body. |
| Communication of decision | <ul style="list-style-type: none"> • Results of the evaluation process is communicated by NICE within two weeks to the project coordinators after funding decision is made by national/regional authorized bodies • This is done by sending the Project Evaluation Report to the project coordinators. | |
| Contract negotiation | National/regional funding agencies negotiate directly with partners they potentially will fund. | NICE negotiates with project coordinator. |
| Contract signature | National/regional funding agencies enters into contract with partners they fund. | NICE enters into contract on behalf of SAFEFOODERA/ involved national/regional agencies. Project coordinator enters into contract on behalf of the project consortium. |

PROJECT MONITORING

Status report

Projects funded through the SAFEFOODERA call will be asked to present a status report every 6th month through a SAFEFOODERA status report form, available on www.safefoodera.net. See also Annex 1: Guideline for 6 month status report.

Final report

Guideline and forms for final reports will be available on www.safefoodera.net. The final report will consist of an administrative and a technical report. See Annex 2: Guideline for reporting.

Overview of all topics and participating organisations

List of topics

- Topic 1: TITLE Detection of traces of allergens in food
- Topic 2: TITLE Bioactive ingredients
- Topic 3: TITLE Chemical food contaminants
- Topic 4: TITLE Emerging risks
- Topic 5: TITLE GMO
- Topic 6: TITLE MRSA/Anribiotic resistance
- Topic 7: TITLE Risk-benefit analysis
- Topic 8: TITLE Risk assessment of food-born pathogens
- Topic 9: TITLE Traceability

Table 1: The call funds (in thousands EUR) dedicated by participating countries/regions per 2 years for different call topics (see list of topics) in the 'common pot' and in the 'distributed pot' types of funding :

| Participating Country/Region | Funding Institution | Type of funding: distributed pot (central call & specific national rules* apply) | | | | | | | | | Type of funding: common pot (just central call rules apply) |
|------------------------------|--|---|------------|------------|------------|------------|------------|------------|------------|------------------------|---|
| | | Topic 1 | Topic 2 | Topic 3 | Topic 4 | Topic 5 | Topic 6 | Topic 7 | Topic 8 | Call funds per country | Topic 9 |
| Basque country | Department of Agriculture, Fisheries and Food - DAPA | 140 | | 30 | | | | | 30 | 200 | |
| Cyprus | Research Promotion Foundation of Cyprus - RPF | | | 50 | 50 | | | | 50 | 150 | |
| Czech Republic | Ministry of Agriculture | 200 | 100 | | | | | 100 | | 400 | |
| Finland | National Technology Agency of Finland - TEKES | 150 | | | | | | 150 | | 300 | |
| Germany | Federal Institute for Risk Assessment - BfR | | | | | | 60 | | | 60 | |
| Germany | Federal Office of Consumer Protection and Food Safety - BVL | | | | | 90 | 90 | | | 180 | |
| Iceland | Icelandic Centre for Research - RANNIS | | 200 | 100 | | | | 200 | 200 | 700 | |
| Netherlands | Ministry of Agriculture, nature and Food Quality - LNV | | | | | | 200 | | | 200 | |
| Netherlands | Dutch Food and Consumer Product Safety Authority - VWA | | | | 200 | | | 200 | | 400 | |
| Nordic** | Nordic Council of Ministers - NCM* | | | | | | | 67 | | 67 | |
| Nordic** | Nordic Innovation Centre - NICe** | 300 | 300 | | 300 | | | | | 900 | |
| Norway | Research Council of Norway - RCN | | | 250 | 150 | | | 200 | | 600 | |
| Portugal | Foundation for Science and Technology Research -FCT | | | 100 | | | | | 100 | 200 | |
| Slovenia | Ministry of Higher Education, Science and Technology - MHEST | 80 | 80 | 80 | | | | | | 240 | |
| United Kingdom | Food Standards Agency - FSA | | | | | 200 | 200 | | | 400 | |
| TOTAL | per call (2 years) | 870 | 680 | 610 | 700 | 290 | 550 | 917 | 380 | 4 997 | 590 |

* applicants are advised to contact the national SAFEFOODERA call contact persons

** Applicants from Denmark, Finland, Iceland, Norway and Sweden can apply

| | |
|-------|-------|
| Total | 5 587 |
|-------|-------|

CALL TOPICS

The SAFEFOODERA 2nd Call for proposal includes nine topics. The following list of topics gives detailed information to potential project leaders and participants on each topic. Each proposal must fit in one of these topics, and will only be evaluated within on topic. Please be aware of differences in funding models and requirements between the topics.

1. **DETECTION OF TRACES OF ALLERGENS IN FOOD**
2. **BIOACTIVE INGREDIENTS**: Safety of bioactive ingredients in functional foods
3. **CHEMICAL FOOD CONTAMINANTS**
4. **EMERGING RISK**: Effects [Consequences] of climate change on [for] feed and food safety
5. **GMO**: Development of screening methods of GMO
6. **MRSA/ANTIBIOTIC RESISTANCE**: The zoonotic potential of methicillin-resistant *Staphylococcus aureus* (MRSA) – antibiotic resistance and non-typable (NT) strains
7. **RISK-BENEFIT ANALYSIS**
8. **RISK ASSESSMENT** OF FOOD-BORNE PATHOGENS
9. **TRACEABILITY**

1. DETECTION OF TRACES OF ALLERGENS IN FOOD

This topic is funded by the following organisations (welcoming proposals from countries in brackets):

DAPA (Basque country) € 140K

MHEST (Slovenia) € 80K

MZE (Czech Republic) € 200K

NICe (Nordic countries) € 300K

TEKES (Finland) € 150K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

Problem description

Food allergy can be defined as a type of immunological reaction usually mediated by IgE as a response to ingestion of the food or through cross-reaction with respiratory allergens such as pollen or latex. More than 120 foods have been described as causing food allergies. However, the foods that most commonly cause serious allergic reactions on a worldwide basis are: Milk, egg, peanut, tree nuts followed by cereals mainly wheat, soybeans, fish, and shellfish.

Reliable detection and quantification methods for food allergens are necessary in order to ensure compliance with food labelling in agreement with legal demands concerning a compulsory labelling of allergenic ingredients (Directive 2003/89/EC; Directive 2000/13/EC; Directive 2006/142/EC; on national level e.g. Decree No.113/2005 Col., Decree 101/2007 Col. in the Czech Republic). For the detection of allergenic foods, specific proteins or DNA fragments, the enzyme-linked immunosorbent assay (ELISA), polymerase chain reaction (PCR), PCR-ELISA and electrophoretic methods are utilized.

The 'true' prevalence of food allergy in Europe is not known but the different data reported range values from 1 to 11%. (Rona, et al (2007). The prevalence of food allergy: A meta-analysis. *J Allergy Clin Immunol* 120(3), 638-646). There is currently no specific treatment for this type of allergy and the most successfully strategy is to avoid the food that causes the allergy. To do this it is necessary to know exactly what is in the food.

The most routinely used and mastered technique for allergenic proteins determination is ELISA. There

is a number of commercially available ELISA kits for the determination of allergens listed as being in regime of compulsory labelling. This group is represented by milk proteins, gluten, soya proteins, allergenic proteins of various tree nuts. However, ELISA kit for some allergenic proteins are not offered on the market. Some existing commercial kits are recommended for narrow group of food matrices, and not each commercial kit is suitable for all food matrices.

Research Requirements

There are already many different test kits on the market to identify food allergens but the offer is not enough for all food matrices and at the moment the different immunoassays can hardly be compared to each other. There are several reasons for this:

- characterisation of all reagents used is highly needed e.g. a clear definition of the used antibodies.
- use of different methods for extractions of the proteins.
- lack of standardisation of which allergens to test e.g. for milk: casein or BLG?
- lack of reference materials
- to test antibodies.
- to compare different test kits.

With these basis and having in mind that currently the ELISA is the most suitable methodology to detect traces of allergens in food, this method could be suggested as a main brick to build the project strategy.

To develop new kits two main reagent groups must be taken into account: allergens (native purified or recombinants) and antibodies (poly and monoclonals). For both solutions (using available kits or developing new ones) is necessary to develop reference materials and arrange large scale ring trials with a high number of laboratories to compare different methods would allow for further standardisation.

Proposals are invited which will address one or more of the following Research Questions:

1. Allergenic proteins in foods and their detection methods

Major, minor or cross-reactivity individualized allergens from the above mentioned foods have been characterized (www.allergome.com) and some of them can be considered as markers for allergy diagnosis.

Milk, egg, soy, fish, peanuts, tree nuts, fruits (mainly belonging to the rosaceae family), wheat, shellfish, and some vegetables are the main sources of food allergy. (R J Rona and cols. J Allergy Clin Immunol 2007; 120: 638-46; www.foodallergens.info; www.foodallergy.org)

From each source, there exist one or more proteins that can be cause of allergic reactions but in many cases it would not be necessary to include all allergens in the panel because the choice of a relevant allergenic with the highest content in certain food, could substitute the use of all allergenic proteins included in the above mentioned food. Considering these sources as a basic panel for study, the definition of relevant allergenic proteins of each source of food could be a simple key to design the protocol including the development of standards.

Methods available so far are based on protein or DNA detection (RE Poms and cols, Foods additives and contaminants 2004; 21:1-31), but not all commercial kits are suitable for analysis of all food matrices. So, the available material for detection of foods allergen is insufficient and for the future it is necessary to develop, new reagents and to build new kits to have a complete tool able to detect allergens in all food matrices.

2. Development of the allergen standard and methods to detect traces of allergens in different substrates

Standard reagents:

Characterization of individualized allergens in basis of their stability should be studied, considering that the food matrix may influence the detection and recovery of standards.

Standard universal methods to measure stable proteins or stable peptides should be defined to have the minimum coefficient of variations. The standards must be the main tool to define the sensitivity of the method in order to choose the more appropriate technology to reveal traces of allergens. A fine balance between simplicity and availability of the methodology and high sensitivity can be found with EIA-sandwich using monoclonal antibodies or EIA-inhibition techniques. Sensitivity values of methods should be sufficient to detect allergenic protein traces in foods at levels low enough to minimize the risk for allergic consumers (CK faeste and C Plassen, J Immunol Method 2007; 329: 45-55).

Reproducibility, coefficient of variations limits of the standards and comparison of the results should be tested on the basis of the work done in all laboratories. Enough standards shall be prepared to deliver the same batch to all laboratories. Quality control of the each final batch standard must be performed on the basis of the purity, nature, concentration and allergenicity in the case of allergens.

Obtaining and characterization of antibodies to carried out the EIA methods:

Monoclonal antibodies

Polyclonal antibodies from experimental sera

Specific IgE to foods (human sera).

Quality control of the each batch of the antibody standards must be performed on the basis of the isotype, antibody-activity and affinity.

Methods

As we mention above, these methodologies should sensitive enough as to detect allergenic protein traces in foods at levels low enough to minimize the risk for allergic consumers.

1. Immunological methods:

1.1: EIA sandwich using monoclonal antibodies

1.2: EIA inhibition using polyclonal antibodies from experimental

1.3. EIA competitive system

2. Biochemical methods

2.1: PCR

2.2: Fine analytical spectrometry

3. Influence of novel technological treatment of food on allergen detectability in food products.

After food treatments, allergens could be modified in particular conformational epitopes. Detection methods should take into account these modifications in order to avoid false positives and/or negatives. Therefore, the detection of trace allergens based mainly on immunological methods could be influenced (S. Tanabe. Biosci Biotechnol Biochem. 2008, in press; Pastorello and cols. Int Arch Allergy Immunol. 2007; 144: 10-22)

3. Validation of results from large scale ring as a basis for the subsequent practical applications

Interlaboratory tests will be launched in order to evaluate the accuracy, precision, repeatability and reproducibility of the methodologies. The establishment of routinely ring test through Europe will be enforced.

2. BIOACTIVE INGREDIENTS: Safety of bioactive ingredients in functional foods

This topic is funded by the following organisations (welcomes proposals from countries in brackets):

[MHEST](#) (Slovenia) € 80K

[MZE](#) (Czech Republic) € 100K

[NICE](#) (Nordic countries) € 300K

[RANNIS](#) (Iceland) € 200K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

Problem description

Studies on safety aspects of added bioactive ingredients in functional food are needed to provide scientific evidence of proven health effects and adverse effects to substantiate health claims and for establishing dietary guidelines.

Bioactive components from plant sources (i.e. sterols, carotenoids, flavonoids, polyphenols etc.), vegetable and marine oils, peptides / proteins and pre- and probiotics are currently used in functional food formulations. Acceptable levels of added bioactive ingredients in food formulations have not been established and information about the levels of specific bioactive ingredients (micronutrients) in different foods is limited. Studies on their availability, mechanism of action and synergistic effects in the whole diet are needed to prevent the risk of overdosing of presumably healthy components. Better understanding of the mechanisms of pre- and probiotics and their acceptable levels to improve gut health is also required. There is also concern about the safe application of nanoparticles as carriers and delivery systems for bioactive compounds. Establishment of methods and studies on biomarkers to evaluate the responses of different doses of bioactive ingredients are needed. This encompasses methods based on i.e. proteomic or genomic approach as well as cell culture models to evaluate influences on various diseases (i.e. oxidative stress related diseases). Current omics technologies enable elucidation of the molecular basis for the activity of bioactive ingredients of functional foods.

Identification of problems at the national and/or regional levels

Studies are needed to support EFSA activities on scientific and technical guidelines for the adoption of the regulation on nutrition and health claims made on foods (EC) No 1924/2006. The health effects of bioactives in functional food are being studied however an overview of accumulative effects of bioactives in the diet is lacking for establishing recommendations and dietary guidelines. The safety determination of a functional ingredient involves many elements. These include compositional analysis and currently there is limited information available in food composition databases on bioactives and micronutrients. Therefore, evaluation of exposure of bioactives in diet and functional food is difficult. The concern of overdosing of certain bioactives like i.e. carotenoids in particular for vulnerable groups is the driver for toxicity studies and evaluation of differences in uptake/health effects from a specific bioactive ingredient when subjected in different forms: (i) in the original raw material, (ii) isolated, (iii) isolated and added to a novel carrier (i.e. a functional food product)

Research requirements

The aim is to establish methods and model systems to investigate the fate of bioactive ingredients on digestion of food matrices and evaluate the bioavailability of bioactive components. The proposed studies are primarily intended to evaluate the risk of overdosing of presumably healthy bioactive components.

Work will include:

- studies to evaluate the effect of bioactive components and influence on health and possible adverse effects in model systems
- studies on stability and fate of bioactives in food matrices

The collaboration of food scientists, nutritionists, and toxicologists is required and participation of companies is recommended. Collaboration on a European level will benefit SMEs working on extraction and production of bioactive ingredients for nutraceuticals or functional foods since they may have limited resources to obtain scientific evidence on health effects and data is lacking to establish guidelines on safe limits in products.

Proposals are invited which will address one or more of the following research questions:

- Nutritional mechanistic studies on bioavailability of bioactive ingredients using in e.g. in vitro digestion models, cell culture models and in vivo animal feeding studies.
- Identification of biomarkers for efficient safety assessment: Development of appropriate (adapted, simpler) toxicological methodologies (including possible allergenic potential) of the bioactive components and their carriers and establishment of valid biomarkers.
- Development of appropriate model systems to study activity and function of bioactive ingredients including prebiotics and probiotics in food systems.

Case studies:

- How to optimize food formulations including bioactive ingredients or nutrients to ensure stability and bioavailability of bioactive ingredients in food matrices through processing, storage and consumption conditions.
- Investigation of distribution/partitioning of bioactive ingredients within food matrices and development of bioactive ingredient systems (carrier system) to aid in incorporation into food matrices and maximize stability and activity.
- Evaluate safety of added bioactive compounds by studying what are the effects from degradation products that certain bioactive compounds give rise to in the product/after intake? (i.e. development of methods for defining individual risks for undesired responses to food)
- Analysing and screening health responses of different doses of various ingredients in different functional cell culture systems
- Proteomic approach to establish new biomarkers for validation of efficacy and safety of bioactive compounds from food and marine environment using in vivo model system (i.e. yeast, mammalian)

Current programmes and projects

Several EFSA documents are highly relevant as background documents for the discussion and formulation of this topic within SAFEFOODERA:

["Opinion of the Scientific Panel on Dietetic Products, Nutrition and Allergies on a request from the Commission related to scientific and technical guidance for the preparation and presentation of the application for authorisation of a health claim"](#)

[Discussion Paper](#) on "Botanicals and Botanical Preparations widely used as food supplements and related products: Coherent and Comprehensive Risk Assessment and Consumer Information Approaches"

3. CHEMICAL FOOD CONTAMINANTS

This topic is funded by the following organisations (welcoming proposals from countries in brackets):

DAPA (Basque country) € 30K

FCT (Portugal) € 100K

MHEST (Slovenia) € 80K

RANNIS (Iceland) € 100K

RCN (Norway) € 250K

RPF (Cyprus) € 50K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

Problem description

Chemical food contaminants include a broad range of substances in many different types of food and food products. The range of substances includes residues of pesticides and veterinary drugs, mycotoxins, dioxins and other persistent organic pollutants (POPs) as well as contaminants formed during processing and cooking of food. Most of the European countries have today organised monitoring programmes in order to follow the level and trend of chemical contaminants in food on their markets. These programmes are for obviously reasons directed to known contaminants, but during recent years, the food industry and the consumers have experienced several new or unsuspected problems. These include for instance acrylamid, phthalates, fluorinated compounds and recently methyl mercury in fish had to be reconsidered due to new studies of the toxicological effects of this contaminant.

Many of the new challenges are caused not only by environmental changes but also by new production technology or methodology or by changes of consumer habits. Other problems might be recognize when new knowledge of known substances becomes available or when new data indicate

that such substances are more unhealthy than assumed so far. Mission-oriented research focused on the risk analysis process is a prerequisite for a proper solution of any food safety problem. The aim of the research is to gain more insight into the occurrence, effects and toxicology of chemical food contaminants and into the human exposure to such substances. The research should have a holistic view and preferably cover any potential food contaminant in the whole area from production until consumption. Risk analysis of chemical food contaminants and toxins is a continuous process combining research activities with development of new analytical methods for screening, quantification and identification of risk and hazards, implementation of monitoring programmes in different food items, toxico-kinetic studies, evaluation of results and development of management options such as control programmes and risk management by food producers and authorities.

Research Requirements

The overall objective of the call is to protect consumers against dietary exposure to chemical substances that can cause undesirable health effects. The call is directed to develop and strengthen the basis for the risk assessment process in a transparent manner by the use of sound and scientifically derived information and by the application of established scientific procedures carried out with focus on one or more of the four interrelated pillars of risk assessment :

1. Hazard Identification, i.e. identification of the hazard and comprehension of the danger it represents the impact in terms of human health and the circumstances under which the danger is present.
2. Hazard Characterization, i.e. qualitative and/or quantitative evaluation of the adverse effects of the hazard on human health.
3. Exposure Assessment, i.e. qualitative and/or quantitative evaluation of the likely degree of consumption or intake of the hazardous agent.
4. Risk Characterization, i.e. integration of the first three steps into an estimate of the likely adverse effect in the target population.

Risk assessment of chemical food contaminants is a rather large area, which include many different organic and inorganic substances of potential interest. The present call gives priority to studies of environmental contaminants like halogenated persistent organic pollutants as well as metals and organ metallic compounds. Also the class of process induced contaminants like the Polycyclic Aromatic Hydrocarbons (PAH), acryl amide, furan or 3-MCPD (mono-chlor-propandiol) has a high priority. Furthermore naturally occurring biotoxins like mycotoxins and marine biotoxins are relevant for this call, whereas research on substances migrating from packing materials and compounds used as "production aids" like pesticides, veterinary drugs or food additives will not be supported in the programme.

The programme is not limited to certain classes of food or food products but includes primary and intermediate products as well as processed and/or cooked foodstuffs. Fruit and vegetables as well as food of animal origin including seafood are all relevant types of food, although priority will be given to foodstuffs, which are consumed by a larger part of the population rather than by a specific small subgroup.

The programme has a broad scope as defined by the topics, which are described below. Applicants should indicate which topic or topics they are dealing with in their project proposals:

- Analytical methodology for determination of chemical contaminants:

The development and validation of analytical methods fit for the purpose are necessary for identification of upcoming hazards and for controlling and monitoring the occurrence and levels of chemical contaminants in food. Such data are also important for exposure estimations. Focus could be rather broad including many different methods or it could be more specific for instance on the use of modern mass spectrometry for measurement and identification of chemical food contaminants including speciation of organometal compounds by combined LC-ICP/MS. The research area includes improvement of methodologies for the measurement of known contaminants and identification of new risks - in this case mass spectrometry is considered to be a powerful technique - as well as development of new tools and techniques (including sample preparation) for quantitative determination of the identified contaminants should be addressed so as to provide food companies and authorities with reliable and rapid methodologies. Fast screening

methods for control of compliance with fixed limit values as well as more precise methods to generate data for exposure assessment are of interest.

- Sources for chemical contaminants:

Insight into the formation of and sources for chemical contaminants and their uptake into food are of great importance for the assessment and proper handling of chemical food safety problems. This is important whether the source is environmental or it is derived during the processing of the foodstuff. It is in all cases important to gain the necessary insight and understanding of the source and formation of the contaminant in order to development of right tools and technologies to minimise or even remove the hazardous substances before the food is consumed

- Levels of chemical contaminants:

Determination of the occurrence and concentration of the contaminants in food is crucial for setting new limit values and controlling the compliance with fixed limit values. It is furthermore vital for exposure assessment and therefore also for risk assessment. Knowledge of the stability (persistence) as well as the possible degradation/metabolisation of the contaminants along the food chain is also important. In this context the bioavailability of different classes of contaminants is of particularly important. Priority in this area will be given to research focusing on not so well known hazards for which only very few data is available.

- Hazard characterization of chemical contaminants:

Research in this area should be directed to describe the toxicological effects, including the carcinogenic and other health damaging properties, of the contaminants and to determine the threshold values for the acceptable or tolerable daily (weekly) intake (ADI or TDI/TWI) and the acute reference dose (ARfD) of the chemical contaminants. Animal experiments might be an important part of the research. The development of new bioassays to characterise the toxicological properties of the contaminants are an important area.

- Exposure Assessment:

The research should be directed to develop methods to estimate and measure dietary exposure to chemical contaminants. The evaluation and further development and calibration of deterministic and probabilistic models are crucial for exposure estimations and identification and development of chemical biomarkers for exposure (and for effect). Biomonitoring – direct measurement of food contaminants or biomarkers in human body fluids and tissues – is of special interest .

- Cumulative exposure:

Exposure and risk assessment is normally performed for single substances. However, it has been realized during recent years that risk assessments should take into consideration that consumers during short time (one day) are exposed simultaneously to several contaminants. The research on cumulative exposure should be directed to study possible synergetic effects between the individual contaminants and it should further aim to develop strategies and methodology for estimation of the exposure and the assessment of the possible risk of this exposure.

4. EMERGING RISK: Effects [Consequences] of climate change on [for] feed and food safety

This topic is funded by the following organisations (welcomes proposals from countries in brackets):

NICe (Nordic countries) € 300K

RCN (Norway) € 150K

VWA (The Netherlands) € 200K

RPF (Cyprus) € 50K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

Problem description

It is internationally recognised that climate change has become one of the most critical issues for the future of the planet. Last year the European Commission has published a so-called "green paper" on the necessity to adapt to climate change in Europe . Furthermore, the European Economic and Social Committee has issued an opinion in 2006 on the consequences of climate change for agriculture, forestry and fisheries . Both documents state that atmospheric warming has many effects, both direct and indirect, in different areas and sectors among which, agriculture, fisheries and human and animal health.

Although direct impacts on food and health, like famine, pests and infectious diseases, are evident there is also a demand for safeguarding the high level of food quality and safety. There is a need for adequate risk management systems to reduce plant and animal diseases caused by climate change.

Due to the nature of this global change the "green paper" states that an integrated, cross-sectoral and holistic approach is needed in research. Furthermore, access to and integration of existing data should be improved as well as Europe-wide networks for the exchange and consolidation of knowledge should be promoted.

Taking into account that climate change already has and will have effects on plant and animal health it is important that transnational, cross-sectoral research is dedicated to the identification of possible hazards (re)emerging from the feed and/or food chain.

Research Requirements

With respect to the impact of climate change on feed and food safety the following overall research question is formulated:

"Considering climate change as a risk factor it is requested to identify possible (emerging) hazards in the feed and/or food chain and to quantify the relationship between climate change and possible (emerging) hazards using existing, reliable data(bases)".

Proposals are invited which will address one or more of the following research questions:

1. Identify possible (emerging) hazards in the feed and/or food chain that are due to the effect of climate change on plant health.
2. Identify possible (emerging) hazards in the feed and/or food chain that are due to the effect of climate change on animal health.

In both cases, as stated in the overall research question, the research should focus on the quantification of the relationship between climate change and (re)emerging hazards resulting from this global change, in other words a cause-effect analysis should be performed using existing data to substantiate the relationship.

Obviously, the degree of correlation between change and hazard will depend on the amount and quality of the available data. It is foreseen, that relationships with varying degrees of uncertainty will lead to the description of likely and less likely scenario's.

In case emerging hazards can not be clearly identified it is requested to identify indicators that may signal the occurrence of an emerging risk as defined by the European Food Safety Authority (EFSA) . Also in this case it is necessary to identify the data and databases needed for the quantification of the relationship between climate change and indicators. Examples of indicators are given in the reference of EFSA.

Demarcation

The research should lead to the identification and characterisation of possible indicators and/or (re)emerging hazards, in the latter case this refers to the first two steps in the well-defined process of risk assessment. In this project there is no need to determine the actual risk related to the hazard.

Type of research

As mentioned in the introduction this research should be transnational and cross-sectoral. This means that different research disciplines in different areas should work together: climatologists, toxicologists, experts on plant or animal health, etc.

The nature of the research does not require laboratory work.

5. GMO: Development of screening methods of GMO

This topic is funded by the following organisations (welcomes applicants from countries in brackets):

BVL (Germany) € 90K

FSA € 200K / £ 160K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

FSA/UK: there could be the possibility of a third year of funding for suitable proposals – these would need to be structured in such a way that the first two years would need to stand alone with a possible further 1 year as an extra module if the first two years were successful.

Special requirements:

BVL/Germany: Private sector cannot be funded

Problem description

The acreage and diversity of genetically modified (GM) crops on the world market is constantly increasing. Since the year 1996 a total of 539 approvals in 51 countries have been granted for 107 events for 21 crops. As a consequence of this growth rate, the presence of GMOs is becoming more and more widespread, and the possibility of non-deliberate release of GMOs into the environment and carryover into the food and feed chain is increasing. Recently, there have been examples of unauthorised GM products that have been detected at the EU market, including GM papaya, Bt10 maize and LL601 and Bt63 rice.

In the European Union authorisation of GMOs is strictly regulated. The threshold for labelling of EU- authorised GMO events used for food and feed is set at 0.9%. For all GM products not EU- authorised a zero tolerance is applied. The presence of unauthorised GM material is problematic because unlike authorized GMOs, the safety of these materials may not be assessed by the European Food Safety Authority (EFSA). The challenges of the detection of unauthorised GM materials in food products are information availability, affordable cost, speed and high throughput. To be able to control presence of any GMO on EU market also in the future, new technologies and strategies will need to be developed.

The surveillance concerning the presence of GMO in food products nowadays is a several steps analytical process. It includes sampling, grinding and homogenization of the sample, extraction and quantification and finally a test for identification and/or quantification. The preferred analytical method is based on the detection of the genetically modified DNA. State of the art and steps involved in the analysis of DNA extracted from a test sample are the following:

- Taxon-specific and GMO screening PCR tests

The taxon-specific methods are useful to assess the plant species present in the sample, the single-element screening methods target recombinant DNA sequences common for several but not necessarily all GMOs. If the presence of a GMO is confirmed by a positive screening result, the next step will be:

- GMO identification and quantitation in construct- or event-specific PCR tests

If the GMO is identified it may be necessary to quantify the amount of the GMO by use of quantitative PCR methods (construct- or event-specific) in order to verify compliance with the 0.9% labelling threshold.

The series of PCR tests that may have to be performed until the GMO is identified and its amount is quantified could be difficult and rather laborious and expensive, particular in situations where several GMOs or hybrid GMOs (stacked events) are present at the same time.

Research Requirements

It can be expected that the currently available PCR methods used for GMO detection by the enforcement laboratories will not be sufficient to meet the requirements of the GMO-related EU regulations in the future. In particular, the increasing presence and diversity of GMOs in the environment and their uses in food and feed production will be a challenge, if any material derived from GMOs shall be detected and qualified as EU-authorized or EU non-authorized. In particular it is unclear how unknown DNA sequences present in "unknown GMO" shall be detected. New technologies and instruments are needed that offer high throughput detection of multiple or unknown inserts in order to provide suitable analytical tools for discovering multiple GMOs at the same time including unknown GMOs. The series of PCR tests that may have to be performed until the GMOs are identified and their individual amounts are quantified should be reduced.

New GMO detection methods should be faster, simpler and cheaper in order to allow enforcement of the GMO related EU-regulations. More screening methods should be available and ideally to be able to detect the maximum number of GMOs with improved sensitivity and robustness. It is possible to classify three different application fields which should be addressed by the methods to be developed:

- Screening methods for the control for presence and concentration of GMOs authorised in the EU (level of concentration to test along the threshold)
- Screening methods to control for presence of GMOs not authorized in the EU but for which detailed information is available (e.g. pending authorisation)
- Screening methods to control for presence of GMOs not authorized in the EU for which minor or even no information is available ("unknown GMOs")

As it is expected that PCR methods will remain important in the field of GMO detection for several more years, it appears therefore necessary to develop additional screening PCR methods and to improve the current PCR methods, including identification and quantification of stacked events and unknown GMOs. Advanced PCR methods may use multiplexing of single-element screening methods, automation and/or miniaturisation and combinations with new technologies (e. g. microarrays).

It has to be searched also for simple alternative methodologies besides existing PCR (less expensive, more rapid). There is an essential need to evaluate the accessibility and possibilities for data retrieval concerning the detailed information about the genetic modifications present in the globally used GMOs. If the quality of collectable data is sufficient a next step toward the development of broad screening methods will be to establish a database which enables the use of bioinformatics search tools.

Research questions

Proposals should include the following topics:

(a) Bioinformatics methods

Building of a database with all available information about GMOs accessible in dossiers and reports, current databases, public website providing detailed descriptions of the genetic modifications in GMOs, the regulatory elements present in the transgenic constructs in order to develop advanced screening methods and to establish a matrix-based approach to provide the most efficient strategy for GM detection and identification.

(b) DNA-based amplification methods

Design and development of screening methods identifying the GM elements to allow fast and less cost-intensive discrimination of EU-authorized GMOs such as new multiplexing detection systems based on micro or nanotechnologies to cover a wide range of possible GMOs. These advanced screening methods have to be in-house performance validated and also validated in (international) collaborative trials.

(c) DNA-based hybridisation methods

Development of microarrays for the detection of authorized and of unknown GMO, design of appropriate probes tagging all the known regulatory elements (promoters, terminators, enhancers etc.); combination of microarrays with multiplex target amplification approaches and advanced detection methodologies (capillary electrophoresis or NAIMA), including validation of newly developed microarrays and method combinations.

6. MRSA/ANTIBIOTIC RESISTANCE: The zoonotic potential of methicillin-resistant Staphylococcus aureus (MRSA) – antibiotic resistance and non-typable (NT) strains

This topic is funded by the following organisations (welcomes proposals from countries in brackets):

BfR (Germany) € 60K

BVL (Germany) € 90K

FSA € 200K / £ 160K

LNV (The Netherlands) € 200K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

FSA/UK: there could be the possibility of a third year of funding for suitable proposals – these would need to be structured in such a way that the first two years would need to stand alone with a possible further 1 year as an extra module if the first two years were successful.

Special requirements:

BfR, BVL: private sector cannot be funded

BfR: only proposals which have an impact on the risk assessment of MRSA as an emerging zoonosis will be funded.

BVL: only subtopic 1 will be funded

UK: only willing to fund proposals addressing the research questions on antibiotic resistance

Problem description

Antibiotic resistance is a phenomenon giving rising concern. There are at least two reasons for policy makers in the public sector to come into action about this:

- public health implications, as the effectiveness of human drugs is endangered.
- animal health concern, while antibiotic treatments become less effective.

The use of antibiotics in intensive animal husbandry is rising continuously in recent years and so is the level of antibiotic resistance in several states.

It is not clear what the backgrounds are of this. It was assumed that the ban on antibiotic growth promoters in feeds would have had a beneficial effect on antibiotic resistance. Moreover, a rising level of antibiotic resistance could in itself lead to rising use of antibiotics, as higher dosages, longer cures and repeated cures might be considered to be necessary.

MRSA has a generally decreased sensitivity to β -lactam antimicrobials, in many cases it is a multi resistant bacterium. It causes concern because of dangerous infections in humans. Because of its high level of antibiotic resistance, it causes great trouble in hospitals, especially in post-operative infected wounds. Therefore much effort is made to keep hospitals free from MRSA infections using strict diagnostic protocols.

However, MRSA has also a zoonotic potential which is getting more and more important..

Recently it became clear that people that are in regular contact with pigs or with veal calves are often colonised with MRSA. In all cases one specific clone (NT-MRSA) was concerned which could be identified in a number of different countries e.g. Canada, Germany, Denmark. The origin of this clone and its epidemiology are currently unknown. Since this discovery, Dutch hospitals for example have special guidelines for this risk group of people which will be kept in preventive isolation. Nevertheless it is important to distinguish between the epidemiology of clones concerning primarily production animals and of classical human clones.

There are many uncertainties and questions coming up about NT-MRSA, its diagnostic testing techniques, its sources, its epidemiology along the animal food production chain, its transfer to humans, its persistency and about risk management and control.

Research Requirements

Proposals are invited which will address one or more of the following research questions:

ANTIBIOTIC RESISTANCE:

1. To determine the role that commensal micro flora has in the transfer and the persistence of antibiotic resistance, with special emphasis on transmission of ESBL and QNR genes.
2. To develop a system for optimum measurement of usage of antibiotics, including an optimum unit of measurement.

MRSA:

To study the public health burden of NT-MRSA

3. How virulent is NT-MRSA for humans?
4. What is the impact of contaminated food products on the presence of NT-MRSA in humans, including in subpopulations that are at special risk.

7. RISK-BENEFIT ANALYSIS

This topic is funded by the following organisations (welcomes proposals from countries in brackets):

- MZE** (Czech Rep) € 100K
- NCM** (Nordic) € 67K
- RANNIS** (Iceland) € 200K
- RCN** (Norway) € 200K
- TEKES** (Finland) € 150K
- VWA** (The Netherlands) € 200K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

Problem description

Risk-benefit analysis is the comparison of the risk of a situation to its related benefits and comprises a constellation of methods, drawn from many disciplines, and addresses the question of whether a risk is acceptable.

Foods often contain both beneficial and harmful components: nutrients, bioactive non-nutrients on the one hand and anti-nutrients, toxicants, contaminants and other potentially useful or dangerous components on the other hand. Toxicology historically has been directed at studying the mechanisms of adverse effects of isolated compounds on living organisms at high levels of exposure. The results form the basis for risk and safety assessments.

However, the biological effects of a compound at physiologically relevant levels of exposure can be adverse but can also be beneficial, depending on the target organ, the dose, the combined exposure with other chemicals or nutrients and the actual end point studied. Public concerns about GMO foods, functional foods and high levels of nutrient additives and supplements can also be taken into consideration in risk benefit analyses.

When a food or food compound is associated with both potential health risks and benefits, and particularly when the levels of intake associated with risk and benefit are close, there is a need to define an intake range within which the balance of risk and benefit is acceptable for risk management purposes.

One of the main challenges is to agree on the general principles or approaches for conducting a quantitative risk-benefit analysis for foods and food ingredients. This includes the definition of a common scale of measurement for comparing the risks and the benefits. A multidisciplinary approach is required, incorporating experience and expertise from toxicological, pharmacological, nutritional and other sciences.

Identification of problems at the national and/or regional levels

The area of risk-benefit analysis is broad. This is also reflected in a number of EU research projects on this topic, including Qalibra, Beneris and Brafo (see Annex 1). EFSA has organised a workshop on risk-benefit analysis in 2006. We conclude that two broad areas are not yet covered by these projects: models that take into account costs and social aspects. These aspects are particularly important for policy makers. The proposed research aims at developing an instrument that can provide insight in the impact of changes in diet e.g. for populations at risk for a major health problem. This includes costs, willingness to change and impact of changes. In general there is a lack of data. Risk-benefit analysis can contribute to identifying gaps in knowledge.

Furthermore, adverse and/or beneficial effects are studied without taking the whole diet into account. A more realistic analysis can be obtained by looking at the whole diet and by comparing changes in the diet to the previous diet or to the diet of other populations or population groups.

Research requirements

The overall aim of the project is to provide a tool to underpin (Government's) decisions on activities to improve public health by promoting healthy diets.

The risk-benefit analysis will provide a basis for deciding which actions to improve public health will be most successful: where can the largest health gains be realised and with what type of intervention. This should also involve an analysis of costs of risks and benefits.

Work will include:

- developing methods to quantify beneficial and adverse health effects of foods;
- developing methods to quantify economical and social aspects;
- carrying out case studies (complementing studies in other projects) to validate the model;

Furthermore, the project will help creating consensus on general principles or approaches for conducting risk-benefit analyses for foods or ingredients in Europe. We consider it important to use a holistic approach and take the whole diet into account when carrying out risk-benefit analyses.

Duplication with current or planned research projects should be prevented and the experience gained from previous projects must be used to build on.

Proposals which will address one or more of the following research questions are welcomed:

Developing the model

- Develop (additional) methods to quantify beneficial and adverse health effects of foods/diets?
- How to include economical and social factors in the risk analysis process?
- Develop methods dealing with uncertainty in risk-benefit analysis? Consideration of uncertainties in model structure and inputs, and how these could affect the balance between risk and benefit. Which uncertainties can be quantified and how should this be done and communicated? How to evaluate and communicate uncertainties, which cannot be quantified?

Case studies

- To predict future health of population (groups). Can risk-benefit analyses be used as an instrument to optimise the food intake of population groups and to address the requirements of vulnerable groups (i.e. infants, children, pregnant women, elderly or groups with specific disorders)?
- Criteria and strategies for risk-benefit analysis of novel foods and food production technologies.
- Risk and benefit analysis of food fortification and functional foods.
- How to optimize food composition by the addition of ingredients or nutrients to substitute the products actually on the market.
- How to evaluate public health and recent changes in dietary patterns.
- To compare dietary intake and health impact of foods between various countries, lifestyles and consumer groups.

Current programmes and projects

Some experience has been built up on risk benefit analysis. An inventory of completed or running programmes including risk benefit analysis includes:

- EU projects on impact of risks and benefits of foods or food patterns on (public) health:
 - Qalibra and,
 - Beneris: cluster projects. Qalibra is focussing on developing web-based technical tools for risk assessment, while Beneris concentrates on developing useful approaches and strategies (including extensive case studies) and disseminating them through the web,
 - Brafo;
- EFSA activities, including organising a scientific colloquium in July 2006;
- National programmes.

Risk-benefit analyses have been performed or will be performed for:

- folic acid fortification;
- selected food groups including oily fish (with input from Beneris for salmon and herring) and functional foods, for selected EU populations (Qalibra);
- beneficial and harmful effects of nutrients and pollutants in fish (Beneris);
- vegetables in the diet of a specific age group (Beneris);
- natural foods like oily fish and soy, macronutrient replacement agents e.g. sweeteners, fat substitutes, and the impact of heat processing on foods (Brafo)

8. RISK ASSESSMENT OF FOOD-BORNE PATHOGENS

This topic is funded by the following organisations (welcomes proposals from countries in brackets):

DAPA (Basque) € 30K

FCT (Portugal) € 100K

RANNIS (Iceland) € 200K

RPF (Cyprus) € 50K

Funding model: [Distributed pot](#)

Max duration of projects: 2 years

Problem description

Food borne diseases are a widespread and growing public health problem, both in developed and developing countries, causing illness or death due to contamination of food and drinking water with pathogens. Main factors influencing the increase of risk of acquiring a food borne disease are global changes in trade, people habits, migration, food consumption and climate change. Food items like shellfish, cheese or undercooked traditional food stuffs are some of the most important potential sources of pathogenic bacteria or viruses that may be regularly present in these products.

The importance of estimation of the risk of eating a certain food (based on factual information or experience) is increasingly considered. Food authorities and consumers associations need to base the decisions and actions on results of risk assessment studies.

In Europe research on food borne pathogens is nationally dispersed and as shown by the SAFEFOODERA analysis, often overlapping. The exchange of knowledge and expertise are essential to overcome this transnational deficiency for achieving safer food across Europe.

The Risk assessment of food-borne pathogens call topic will help to increase the competitiveness of European food industries and producing sectors and will contribute to the development of food safety standards.

Research Requirements

This topic is to stimulate and sustain multidisciplinary applied pathogen research where transnational collaboration at the EU level is essential to exploit the full potential of most recent pathogen detection methods as well as the elaboration or adaptation of a risk assessment model with application in ready-to-eat and traditional food items as universal as possible.

With the framework of SAFEFOODERA funding will be provided for transnational, collaborative applied projects with partners from academia and industry, that are based on a division of labour with high degree of scientific and technical innovation with the aim to advance the understanding on how to prevent and advise on risk of food incidents, to deliver tools for food managers and administration to base the actions to reduce risk posed by the foodborne pathogens on an acceptable level and to promote food safety more efficiently.

Research topics

Project proposals should focus on at least two of the four stages of risk assessment process of food-borne pathogens in any food matrices and water:

- hazard identification
- exposure assessment
- hazard characterization
- risk characterization.

Potential topics of the proposals could include:

- Bacteria like Salmonella, Listeria, Campylobacter, Yersinia, E.coli, spore forming bacteria, and viruses like norovirus and hepatitis virus
- New detection methodologies
- Development and transnationally comparable validation of new procedures and tools
- Risk assessment models
- Harmonization of sampling and sample preparation methods
- Food consumption patterns
- Mechanisms of interaction between food-borne pathogens and hosts

9. TRACEABILITY

This topic is funded by the following organisations (welcomes proposals from countries in brackets):

FSA

NICe (Nordic countries)

RANNIS (Iceland)

RCN (Norway)

Total budget is € 590K

Funding model: [Common pot](#)

Max duration of projects: 2 years

FSA/UK: there could be the possibility of a third year of funding for suitable proposals – these would need to be structured in such a way that the first two years would need to stand alone with a possible further 1 year as an extra module if the first two years were successful.

Special requirements:

FSA/UK: only willing to fund proposals related to the subtopic of validation of authenticity methods to prevent fraud etc (3rd bullet 1st subtopic in research questions in topic text underneath)

Problem description

According to the EU law, “traceability” means the ability to track any food, feed, food-producing animal or substance that will be used for consumption, through all stages of production, processing and distribution. (Regulation (EC) No 178/2002 of the European Parliament and of the Council. “The general food Law”).

Traceability has become a major concern of the food industries, especially since it became a legitimate requirement in international food trade. Furthermore, as food production becomes more market and consumer driven, the public is also creating greater pressure on traceability. People are more concerned on what they eat – on whether the food comes from sustainable sources and/or is produced through eco-friendly methods, and also whether production, transportation, and storage conditions can guarantee food safety.

For the purpose of food safety:

- Traceability is a way of responding to potential risks that can arise in food (i.e. dioxin contamination and BSE) and help to ensure that food products are safe. Food crisis incidences during last years and the variety of additives used in products, call for traceability of food and stresses the importance to know the origin of the crisis.
- The consumer requirements to know the origin of food (wine, salmon, etc.) and of as to obtain as natural products as possible, in addition to the emergence of genetically manipulated products onto market and questions on environmental protection have urged up the requirements for better transparency and traceability in the food production chains.

European-wide action is of importance, as food products circulate freely between EU countries. Traceability can only be effective if common requirements are met across all Member States. The identification of the specific gaps in the research from the large number of DG-Research projects on traceability like in e.g. TRACE (delivering integrated traceability systems that will enhance consumer confidence in the authenticity of food and aims to improve the health and well-being of European citizens by delivering improved traceability of food products) and PETER (focusing and disseminating the results of European Commission’s investment in research on food traceability) is of high importance to avoid duplication of work.

It is important that the research applications in the traceability topic will be focused on areas of great importance for European countries in terms of production and trade of safe food.

Research Requirements

For the purpose of food safety this program is aiming to:

- Develop reliable tracking and tracing systems to protect consumers against unsafe food.
- The system should also be able to verify the identity/origin of food and/or food products through all stages of production, processing and distribution.
- Incorporate traceability into integrated management systems.

Proposals are invited which will address one or more of the following research questions:

- Development of efficient and effective tracking and tracing systems
 1. Traceability of food and improved technological and management solutions for enhanced traceability and sustainability. Development of value chains from catch/slaughter to plate.
- Development of improved (faster, simpler) and validated analytical methodologies for the detection & monitoring of food safety hazards along the food chain
 1. Use genetics characteristics of food for traceability of authentic origin
 2. Genetic and molecular based (-omics) methodologies for identification (verification) of pathogenic contamination
 3. Sensor technologies to monitor food contamination as for instance at critical control points following a Hazard Analysis Critical Control Point (HACCP) concept for use in traceability systems
 4. Standardization, feasibility and the use of ICT in traceability systems.
- Validation procedures for traceability, including safety and quality assurance, fraud prevention and data management
 1. Authenticity methodology and its use to prevent food fraud which could cause a health risk for consumers.
 2. Systems for tracking and tracing have to be robust and should contain sufficient amount of reliable data to cover the whole chain.
- Validation models for the standardization of methodologies and development of reference materials related to point 4 above.
- Contribution of traceability to quantitative risk assessment procedures.

NATIONAL/REGIONAL REQUIREMENTS AND CONTACT INFORMATION

BASQUE COUNTRY

DAPA funds the following topics:

[CHEMICAL FOOD CONTAMINANTS](#)

[DETECTION OF TRACES OF ALLERGENS IN FOOD](#)

[RISK ASSESSMENT OF FOOD-BORNE PATHOGENS](#)

Funding modalities:

Funding will be provided to the Basque participants according to the rules of the Department of Agriculture, Fisheries and Food of the Basque Government up to 100% of eligible costs.

Contact:

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CYPRUS

The Research Promotion Foundation of Cyprus (RPF) funds the following topics:

[EMERGING RISK](#)
[CHEMICAL FOOD CONTAMINANTS](#)
[RISK ASSESSMENT OF FOOD-BORNE PATHOGENS](#)

Funding modalities:

Funding will be provided according to the rules of [National Framework Programme for Research and Technological Development 2008](#) (text in Greek) of the Research Promotion Foundation (RPF).

RPF does not require a national application, but the identity of Cypriot participants should be clearly indicated in the common application to NICE. Also it should be clearly stated in the proposal what role they would have in the project and an analysis of their budget is required. Successful Cypriot applicants will have to fill the RPF budget forms and submit them to RPF prior to the contract negotiations.

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CZECH REPUBLIC

Ministry of Agriculture of the Czech Republic, MZE, funds the following topics:

[BIOACTIVE INGREDIENTS](#)
[DETECTION OF TRACES OF ALLERGENS IN FOOD](#)
[RISK-BENEFIT ANALYSIS](#)

Funding modalities:

Part of National funding programme: **Food Quality and Safety in Modern Society**

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FINLAND

Tekes funds the following topics:

[DETECTION OF TRACES OF ALLERGENS IN FOOD](#)
[RISK-BENEFIT ANALYSIS](#)

Funding modalities:

General funding principles (in English)
<http://www.tekes.fi/eng/tekes/rd/default.htm>

Tekes funding for research units (detailed national instructions and forms in Finnish)
<http://www.tekes.fi/rahoitus/laitos/mihin.html>

Tekes funding for companies (detailed national instructions and forms in Finnish)
<http://www.tekes.fi/rahoitus/yritys/>

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GERMANY

BVL funds the following topics:

[GMO](#)
[MRSA](#)

BfR funds the following topic:

[MRSA](#)

Funding modalities:

Private sector can not be funded

Contact:

BVL:

Dr. Soumaya Katherine Lhafi
Scientific officer
Tel +49 30 18444 10413
E-mail: safefoodera@bvl.bund.de

BfR:

Dr. Tanja Burgdorf
Research Coordination
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E-mail: Tanja.Burgdorf@bfr.bund.de

ICELAND

RANNIS funds the following topics:

[CHEMICAL FOOD CONTAMINANTS](#)
[RISK ASSESSMENT OF FOOD-BORNE PATHOGENS](#)
[RISK-BENEFIT ANALYSIS](#)
[TRACEABILITY](#)

Funding modalities:

Funding will be provided according to the rules of the Research Fund (RF) and the Technological and Development Fund (TDF). 85% of eligible cost in RF may be funded and 50% in TDF. National evaluation rules do apply.

Contact:

Sigurdur Bjornsson
Head of Innovation and Development
Division for Science and Innovation
Phone: +354 515 5801
Mobile: +354 896 5925
E-mail: sigurdur@rannis.is
<http://www.rannis.is>

THE NETHERLANDS

LNV and VWA funds the following topics:

[EMERGING RISK](#)
[MRSA](#)
[RISK-BENEFIT ANALYSIS](#)

**Funding modalities:**

Please see [General Conditions](#) for subsidy for research (in Dutch) above (Word document). No additional national application is needed. Please use SAFEFOODERA [application form](#)

Contact:**LVN (For topic Chemical food contaminants)**

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Mobile: + 31 6-28550586
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VWA (For topic Emerging risk and Risk benefit)

Ir J.A. Cornelese

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THE NORDIC REGION

The Nordic Council of Ministers (NCM) funds the following topic:

[RISK-BENEFIT ANALYSIS](#)

The Nordic Innovation Centre (NICE) funds the following topics:

[BIOACTIVE INGREDIENTS](#)
[DETECTION OF TRACES OF ALLERGENS IN FOOD](#)
[EMERGING RISK](#)
[TRACEABILITY](#)

Funding modalities:

For applicants from the Nordic countries, it is possible to apply for funding from the Nordic Council of Ministers and the Nordic Innovation Centre. Applicants from Finland, Iceland and Norway may also apply for national funding.

NICE funds maximum 50 percent of project costs. The remaining funds can be covered either in the form of working hours or direct funding. All types of organisations (e.g. companies, universities, research institutes, etc) may apply. Projects must include partners from at least three Nordic countries, and the project coordinator must come from a Nordic country. For further information, see www.nordicinnovation.net

Contact:

NCM
Lene Breum Larsen
Direct +45 33 96 02 43
Mobile +45 29 69 29 43
lbl@norden.org

NICE
Hilde Helgesen
Phone: +47 41 68 65 71
E-mail: h.helgesen@nordicinnovation.net

NORWAY

The Norwegian Research council funds the following topics:

[CHEMICAL FOOD CONTAMINANTS](#)
[EMERGING RISK](#)
[RISK-BENEFIT ANALYSIS](#)
[TRACEABILITY](#)

Funding modalities:

Funding will be provided according to the rules of Researcher projects (Forskerprosjekt) in the Food Research Programme of The Research Council of Norway (RCN).



Up to 100% of total eligible costs may be funded.

RCN does not require a national application, but it should be clear from the common application to NICE what role the Norwegian partners would have and the size of their budget.

Contact:

Øysten Wergeland Rønning
Department for Bioproduction, International Cooperation and Commercialisation, Division for Innovation
Phone: +47 2203 7106/+47 9162 3960
E-mail: oro@rcn.no

PORTUGAL

FCT funds the following topics:

[CHEMICAL FOOD CONTAMINANTS](#)
[RISK ASSESSMENT OF FOOD-BORNE PATHOGENS](#)

Fundação para a Ciência e Tecnologia (FCT) is a public institute in the aegis of the Ministry of Science, Technology and Higher Education and is the main funding agency of the country for research. In its funding activity, the Foundation covers all fields of science and all the actors from research teams in public sector and universities to the private sector.
The mission of FCT is:

- To promote, fund, monitor and evaluate science and technology institutions, programmes and projects, as well as the training and qualification of human resources;
- To foster the development and reinforcement of infrastructures for scientific research and technological development;
- To enhance the diffusion and dissemination of the scientific and technological culture and knowledge, as well as the scientific and technological education and
- To stimulate the modernisation, co-ordination and public availability of science and technology information sources.

FCT encourages its research community and the related private sector to apply for funding for collaborative research in Europe.

Funding modalities:

FCT will make the final approving of funding exclusively based on the ranking list elaborated by the expert panel, since the main objective of FCT is to promote the scientific excellence.

In the case of a positive funding decision all Portuguese applicants will be asked to submit a formal national application. For Portuguese institutions affiliated participants the national regulations will apply, namely with regard to: eligibility of the participants, maximum duration of the projects, consortium agreement, research project follow-up and intellectual property rights. The aforementioned regulations are available for download at the FCT institutional [website](#)

Please note that researchers with more than 100% dedicated time to national funded projects will not be considered eligible.

Contact:

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SLOVENIA

MHEST funds the following topics:

[BIOACTIVE INGREDIENTS](#)

[CHEMICAL FOOD CONTAMINANTS](#)

[DETECTION OF TRACES OF ALLERGENS IN FOOD](#)

Funding modalities:

MHEST funds research projects subject to the national Decree on criteria and standards for allocating resources for the implementation of the National Research and Development Programme.

Slovenian participants need to submit a copy of international application together with national application to the MHEST.

MHEST will co-fund the best research projects with Slovenian participation in SafeFoodERA up to 75% of eligible costs.

Final funding decision will be made by the minister of Higher Education, Science and Technology.

The Ministry of Higher Education, Science and Technology (MHEST) performs tasks in the field of higher education, research, technology, metrology and promotion of the information society. MHEST is the main funding institution in Slovenia in the field of RTD. In its funding activity MHEST covers all fields of science and funds research in eligible public and private research organisations.

Contact:

Marta Sabec Paradiz
Ministry of Higher Education, Science and Technology
e-mail: marta.sabec@gov.si
Phone: +386 1478 4739

UK

The Food Standards Agency funds the following topics:

[GMO](#)

[MRSA](#)

[TRACEABILITY](#)

Funding modalities:

Funding will be provided according to the standard research requirement procedures of the Food Standards Agency at 100% of eligible costs. Note that the FSA will consider funding of high quality partners from both within and outside the UK.

Applicants should follow the application procedures outlined for the SAFEFOODERA call. Applicants who are successful in obtaining funding from the FSA under the distributed pot mechanism will be required to transfer the details of work they will be responsible for to an FSA application form as this is linked to the generation of the necessary UK contract documents. The contract will then be managed according to standard FSA protocols.

Examples of guidance for FSA research calls, including contract management, and standard terms and conditions can be found at the following links:

<http://www.food.gov.uk/multimedia/pdfs/rrdbackgrdins.pdf>

<http://www.food.gov.uk/science/researchpolicy/researchfunding/rrd/requirements/procurementdocs>

Contact:

Alisdair Wotherspoon
Chief Scientist Team
Tel +44 207 276 8786
E-mail: Alisdair.wotherspoon@foodstandards.gsi.gov.uk

FUNDING MODELS

Common Pot

Parties funding the topic financed by the Common Pot funding model all contribute to the common budget without regard to the nationality of the participants to be funded. However, only participants from the countries/regions contributing to the Common Pot are eligible for funding. The project coordinator enters into a contract with NICE on behalf of the project consortium. The project is financed centrally through NICE.

Only one topic is financed through Common Pot; **Traceability**. The total budget is 590 K €. FSA, NICE, RANNIS and RCN contribute to the Common Pot. In general the budget condition is full cost with a funding rate of maximum 100% (national/regional rules apply). When a contract is signed by both parties (project coordinator and NICE) a lump sum of 25% can be invoiced. 40 % can be invoiced when midterm report is accepted, 15% when the final report is delivered and 20% when the final report is accepted.

Distributed Pot

In projects funded through the Distributed Pot funding model each partner in a consortium will enter into a contract with and be financed by their national/regional funding agency. National/regional rules apply and are listed under Funding modalities under each topic.

All topics except Traceability is funded through the Distributed Pot funding model.

Annex 1
Guideline for 6 month status report

Project no.: NICE 08vbn
Project acronym: X-SAFE-X

Project title:

SAFEFOODERA Call 2008 topic:

Periodic activity report (number)

Period covered: date – date Month N - N+6

Date of preparation: date

Start date of project: < date >

Duration: x months

Project coordinator name:
< name >

Project coordinator organisation name:
< Organisation >

Project participants

- (1) project coordinator
- (2) < name, organisation, country/region >
- (3) < name, organisation, country/region >
- (4) < name, organisation, country/region >
- (5) < name, organisation, country/region >
- (6) < name, organisation, country/region >

1 Report on deliverables and milestones

In Table 1 and Table 2 the Milestones and Deliverables, as formulated in the Description of Work, are listed. The final reports follow the “Guideline for final Reporting”.

Those Deliverables and Milestones not included in the original description of Work should be clearly marked as NEW.

Progress to be marked as:

- “Completed” for completed task. Details should be given on publications or other presentation of results in the column for Comments if applicable
- ”On track” for tasks still going on.
- “Delayed” for tasks that are not past their due date but are delayed. The reasons/corrective measures should be given in the column for Comments.
- “Not achieved” for tasks exciding their due date. The reasons/corrective measures should be given in the column for Comments.

Table 1: Milestone List

| Item | Acitivity | Date due | Partner responsible | Progress | Comments |
|------|--|----------|---------------------|----------|----------|
| 1 | Project start-up | | | | |
| 2 | Project start-up meeting | | | | |
| 3 | Project Kick off meeting | | | | |
| 4 | Communication plan finalized | | | | |
| 5 | 1 st Status report (1-6 months) | | | | |
| 6 | | | | | |
| 7 | | | | | |
| .. | Project finalization meeting | | | | |
| .. | Final report | | | | |
| .. | Project end date | | | | |

4. Other comments/suggestions**5. Person months used.**

| Partner organisation | Contact person | Person month so far |
|-----------------------------|-----------------------|----------------------------|
| | | |
| | | |
| | | |
| | | |

Annex 2
Guideline for final reporting

Guideline for final reporting

This guideline applies for all topics in **SAFEFOODERA Call 2008**. For the distributed pots the projects have to contact the national/regional contacts for any extra provisions.

Administrative report by project finalization

Administrative report is due by the end date of the project, and should contain the following elements:

1. Milestone plan (incl. communication activities)
 - The project should report on results and deviations compared to the project's milestone plan (prepared at the beginning of the project)

The milestone plan can be presented through a figure showing progress in time and linked to activities.
2. Audited account (only Topic Traceability)
3. List of participants
Name and contact information of participating organizations and persons
4. List of other National/regional, European or international projects where your project has been participating/cooperative network
5. Address list of target groups for distribution of information regarding your project
6. Invoice (only Topic Traceability)

Guidelines for technical report at the end of the project

All technical reports should contain the following required items:

- **Front page:**
 - Title of the report
 - Month and year of publication
 - Main author(s) (person)
- **Page 2: (Participants)**
 - Name of participants and organisations involved in the project, steering group, etc.
- **Page 3: (Fact-sheet)**
 - Title and project number
 - Author(s) and organization(s), incl. contact information
 - Key words: For libraries, search engines and other reference purposes
 - Abstract: Very brief outline of the project. Only including the most important elements. Max. 250 words.

- **Page 4:** (Executive summary: Total 2-3 pages)
 - Main objectives: Short and concise, list the most important objectives in the project, and discuss whether these objectives have been met. Please relate to the objectives listed in the application/contract.
 - Method/implementation: How has the project been implemented? Which methods have been used?
 - Concrete results and conclusions: What have been the most important results and conclusions? Who has benefited from these results?
 - Recommendations: The project participant's recommendations for further work within this field. NB! Target group specific recommendations. Who should act upon the results? Why and how?
- **Language:** The content of the pages outlined above is to be written in English.
- **Font:** Times New Roman size 12; page numbers: I, II, III, IV etc.
- **Target group:** The Executive Summary (the first 4-7 pages, where the content is described above) should address the general public. The main section of the report should address the specialists.
- **Main section of the report**

After the Executive Summary (the first 4-7 pages, where the content is described above), comes the main section of the report. This part may be formed after the project's own wishes and needs, and should contain more detailed information about the work and the outcome of your project (e.g. technical details, description of methods, details about case-studies, proto-types, etc.). The length may also vary from e.g. 15 to 150 pages.

The projects may also choose to add special documents, for example a guideline or handbook, as an appendix.

The report shall have a standard list of content with chapter titles and page number reference. The report is to be delivered in both word and pdf format.