



# ANNUAL REPORT [compact]



2016

**ANNUAL REPORT** [compact]  
SCIENCE IN THE SERVICE OF HUMANITY

## Foreword



*Prof. Dr. Dr. Andreas Hensel, President*

Dear Readers,

The protection of human health is at the centre of our work so that the world becomes a safer place for people to live. This is a central element of the BfR's mission statement which we updated in 2016. Every year, the range of tasks grows, the extent of international activities widens, and the number of employees increases. But what is it that holds the Institute together at its core? The new mission statement expresses what the BfR stands for and accompanies us in our day-to-day work. This Annual Report provides a compact overview of the wide-ranging tasks of the BfR. We are sure you will notice that this Annual Report is not as long as in previous years and that it above all depicts the facts and figures in the fields of research and risk communication. At the same time, it contains more detailed information on the areas of research, personnel, training and events. Those interested in the core topics of the individual BfR departments may read about them twice a year in the new BfR2GO science magazine.

The independent scientific assessment, research and communication of health risks by the BfR are reflected in the public perception of our work. The BfR conducted its fourth stakeholder survey in 2016. Alongside updated figures on the public awareness of the BfR and general questions relating to consumer health protection, the survey supplies insights into the use and significance of the information published by the BfR. The BfR continuously adapts its laboratory infrastructure in response to scientific developments and in light of new technical options. The "Research" section profiles the third-party funded projects at the BfR that were started in 2016. One of the main aims in the area of personnel recruitment was to expand our refugee programme, and four scientists from crisis regions completed an internship at the BfR culminating in an employment contract. As a result, the BfR is considered by the "Companies Integrate Refugees" network as a best practice example for successful company integration measures. The various topics of the BfR are also mirrored in the BfR Academy, which planned and organised numerous scientific dialogue and information events in 2016 as well as training courses for multipliers.

The results of our work promote a factual and social discourse. And this is only possible thanks to the high level of commitment shown by our employees, whom we would like to take the opportunity to thank for their efforts. We wish you stimulating reading.

A handwritten signature in blue ink, reading "Andreas Hensel".

Prof. Dr. Dr. Andreas Hensel,  
President

A handwritten signature in blue ink, reading "Reiner Wittkowski".

Prof. Dr. Reiner Wittkowski,  
Vice-President

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The protection  
of human health  
is at the centre  
of our work.

# About the BfR



## Objectives and mission

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL). It advises the federal government and federal states (“Laender”) on questions of food, chemical and product safety. The BfR conducts its own research on topics that are closely linked to its assessment tasks. With its work, the BfR makes a decisive contribution towards protecting consumer health.

The BfR was set up in 2002 to strengthen consumer health protection. It is the scientific agency of the Federal Republic of Germany which prepares expert reports and opinions on food and feed safety matters as well as on the safety of substances and products. The BfR is tasked with assessing existing and tracking down new health risks, preparing recommendations on risk limitation and communicating this process to policymakers and the public. The BfR also performs the tasks of the “German Centre for the Protection of Laboratory Animals (Bf3R)”.

The BfR is advised by a network of scientific experts who serve on committees and on the Scientific Advisory Board. As the national Focal Point of the European Food Safety Authority (EFSA) and a partner of the European Chemicals Agency (ECHA), the BfR cooperates with more than 40 national, international, governmental and non-governmental institutions.

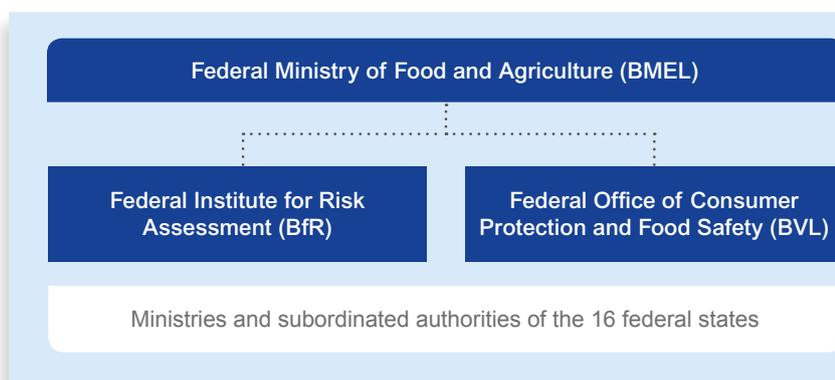
The BfR currently has around 850 employees in nine departments at three locations in Berlin. The BfR is independent in its scientific assessments, research and communication activities.

### Position in the field of consumer health protection

The BfR was set up as a public-law institution with a legal capacity within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) and advises the federal ministries on questions regarding the field of consumer health protection. It assesses health risks in a scientific process and outlines options for action to minimise risks. Concrete measures are translated into protective measures for the consumer by management action on a national government level.

**i** *The legal foundations of the BfR in detail:*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute** > **Remit**

In Germany, it is the job of the authorities in each federal state (“Land”) to monitor compliance with national and European legal regulations in the area of consumer health protection. The BfR supports Germany’s federal states in this task – by developing and establishing analytical methods for monitoring purposes, for example, or by taking a stance with regard to topical issues in the field of consumer health protection. The BfR is also involved in a number of registration and approval procedures.



For justified consumer protection measures, the current state of scientific knowledge is first ascertained from the Federal Institute for Risk Assessment. In contrast, the Federal Office of Consumer Protection and Food Safety and the Federal Ministry of Food and Agriculture are responsible for management tasks at the federal level.

# The Executive Board and the Departments

“Identifying risks – protecting health” – this is the central task of the BfR. The Institute is headed by its President, Prof. Dr. Dr. Andreas Hensel, and his Vice-President, Prof. Dr. Reiner Wittkowski. They are supported in their work by several staff units and the nine departments profiled below.

## Administration Department

Head: Heike Morisse (up to July 2017)

The Administration Department is the service provider for all the specialist departments of the Institute. It handles infrastructure, personnel recruitment, advice for employees in personnel matters, control and monitoring of revenues and expenditures, and the organisational and technical maintenance of the premises and the Institute grounds. The department publishes organisational regulations for the Institute and is also responsible at the same time for compliance with legal regulations.

## Risk Communication Department

Head: PD Dr. Gaby-Fleur Böhl

The Risk Communication Department with its interdisciplinary make-up conducts research projects on the perception of risks and their early identification, and on the estimation of their impact. A further focal point of its work is crisis prevention and co-ordination. The department also comprises press and PR activities, the BfR committee system and the BfR Academy. The dialogue with stakeholders from science, trade and industry, politics, the media, associations, non-government organisations and consumers is of central significance.

## Exposure Department

Head: Professor Dr. Matthias Greiner

The department assesses consumer exposure in the field of food, chemical and product safety and also conducts research projects in this area, including the BfR MEAL Study. It provides expert support in fields like mathematical statistics and modelling. The department performs statutory work and conducts research in the areas of chemical safety, transport of dangerous goods, documentation of poisoning incidents and product formulations as well as Good Laboratory Practice. It is also a service provider for the BfR's IT infrastructure.

## Biological Safety Department

Head: Professor Dr. Karsten Nöckler

The department is involved with the health risks to humans due in particular to microorganisms as well as the toxins formed by these microorganisms and other microbial metabolites. The assessments encompass not only food but also feed and consumer products (e.g. food packaging material, tableware), as well as cosmetics – including the processes involved in their extraction, production, processing and distribution – as vehicles of biological risk.

## Food Safety Department

Head: Professor Dr. Dr. Alfonso Lampen

The department assesses foods with regard to the risk posed by the substances they contain, which include natural ingredients, additives and flavourings as well as undesired substances that find their way into foods through production, storage or treatment processes. In addition, nutritional risks as well as the risks of particular population groups are also assessed. An integral part of the assessment consists of experimental projects on the effect mechanisms of the oral intake (bioavailability), internal exposure (biomarkers) and molecular effect mechanisms (toxicogenomics) of relevant substances.

## Pesticides Safety Department

Head: Dr. Roland Solecki

The department is responsible for the health assessment of active substances in pesticides and their metabolites in plant protection products and biocides. This involves the evaluation of toxicological properties, classification and labelling, as well as the derivation of health-based reference values. Following an estimation of the expected exposure, risk assessments are carried out for consumers and people exposed during and after use. The department also reviews residue monitoring methods and works on the further development of assessment strategies.

### Chemical and Product Safety Department

Head: Professor Dr. Dr. Andreas Luch

The department assesses chemical substances covered by chemicals law and identifies measures to reduce risks. A further task is the identification, investigation, assessment and prevention of health risks emanating from cosmetics, tobacco products and consumer products (e.g. food packagings, toys, clothing etc.). Experimental projects on the migration of, exposure to and toxicity of chemical substances are an integral part of these assessment activities.

### Safety in the Food Chain Department

Head: Dr. Monika Lahrssen-Wiederholt

The department assesses the risks resulting from the intake of contaminants and residues from food and feed products, and quantifies the transfer of undesired substances from the feed of livestock along the food chain to foods of animal origin. Other focal areas in addition to the Senior Expert Office for the Import Control of Wine are product identity and the traceability of food and feed products as well as the analysis of global flows of goods with the aim of early risk identification.

### Experimental Toxicology and ZEBET Department

Head: Professor Dr. Gilbert Schönfelder

The department performs tasks stipulated by the German Animal Welfare Act and regulations on the protection of animals used in experiments. The scientific work also serves to advise political decision-makers. Central tasks are the development and validation of alternative methods to animal experiments in line with the 3R principle. The department is also involved with the (further) development of toxicological test methods which on a regulatory level include the chemicals programme of the Organisation for Economic Cooperation and Development (OECD).



From left to right: Prof. Dr. Dr. Andreas Luch, Prof. Dr. Dr. Alfonso Lampen, Dr. Roland Solecki, Prof. Dr. Matthias Greiner, Prof. Dr. Gilbert Schönfelder, Heike Morisse, Eva-Maria Springer, PD Dr. Gaby-Fleur Böl, Dr. Monika Lahrssen-Wiederholt, Prof. Dr. Reiner Wittkowski, Prof. Dr. Dr. Andreas Hensel, Prof. Dr. Karsten Nöckler

## Principles and working procedures

The German Federal Institute for Risk Assessment (BfR) prepares expert reports and opinions on questions of food and feed safety as well as on the safety of chemicals and products. In doing so, the Institute assumes an important task in improving consumer protection and food safety. In its research, assessments and communication, the BfR is free from economic, political and social interests, and it provides information in a way that can be easily understood by the general public.

### Impartiality

The impartiality of experts is a fundamental precondition for guaranteeing independent risk assessment. For this reason, the practice of separating scientific risk assessment from subsequent risk management asserted itself in Europe over ten years ago. For reasons of independence, the BfR does not seek any funding from industry but is financed exclusively by funds provided by the federal government and through national and international publicly funded third-party projects.

The overall concept of the BfR explicitly provides for the exchange of views with many different stakeholders. These include NGOs, consumer associations, trade and industry, politics, science and the media. When scientific standpoints are voiced and substantiated, the involvement of various stakeholders is of particular importance, but the risk assessments themselves are prepared exclusively by employees of the BfR. External experts merely advise the BfR, but they do not make any official decisions. The work results and recommendations of the BfR serve as an important decision-making aid for the measures taken by all interested groups. The statements issued by the BfR are based on internationally recognised principles and are also substantiated in a way that can be understood by non-experts. Existing knowledge is given adequate consideration and is presented in a manner which is easy to understand. Relevant opposing scientific opinions are also fully outlined.

Transparency is necessary on all levels of risk assessment. From the objective and area of application of the opinion, through the source, type and evidence of the underlying data, the methods used and the assumptions, uncertainties and variabilities, to the result and conclusions, the assessments have to be clear, understandable and reproducible.

### Assessment

The assessment of a risk takes into account the probability of the occurrence of an event which endangers health and the anticipated extent of the health impairment. Although a health risk can never be ruled out completely, an attempt is made through a series of suitable measures known as risk management to minimise the risk to the greatest extent possible and to prevent a threat to health.

The task of the BfR is to provide the responsible people with a sound scientific foundation for risk management. Identifying a risk and evaluating it – the two together are known as “risk assessment” – is the first step in the area of consumer health protection. Risk management can use this as a point of reference and then initiate suitable measures.

Risk assessment is performed on the basis of internationally recognised scientific assessment criteria (see diagram below). This entails the estimation of a risk using scientific methods.

A distinction is made between qualitative risk assessment, in which risks are described verbally in line with the diagram outlined in the box, and quantitative risk assessments. The latter are based at least partly on calculations or mathematical models, and the risks are described using mathematical or statistical methods.

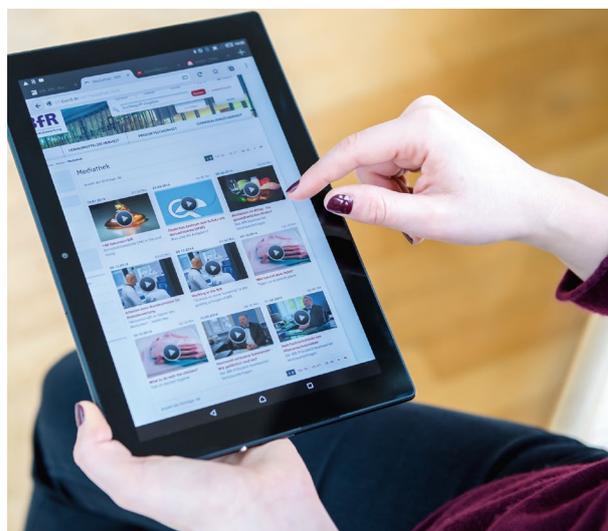
The risk assessments made by the BfR are also always the subject of the Institute's risk communication activities. The BfR has the legal mandate to inform the public about potential, identified and assessed risks.

The assessments are presented in a transparent and easy-to-understand manner. The findings are made publicly accessible on the BfR website while maintaining the confidentiality of protected data. At expert hearings, scientific conferences and consumer forums, the Institute enters into dialogue with representatives from politics, science, associations, trade and industry, NGOs and the media.

**i** The BfR has published a guideline for health assessments in the field of consumer protection which formulates the requirements for risk assessments at the BfR: [www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **Publications** > **Brochures** > **Guidance Document for Health Assessments**

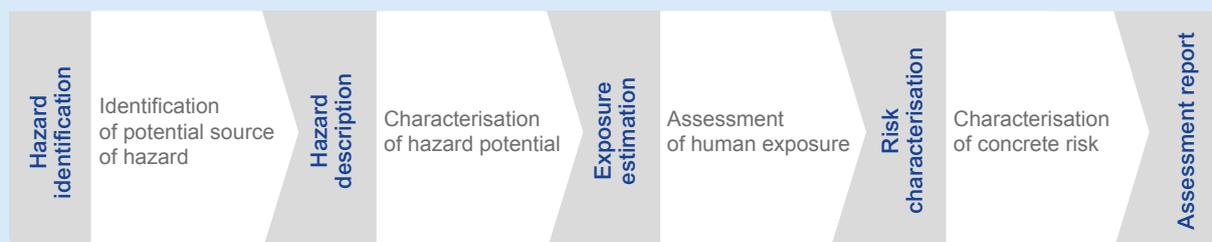


Consumers of all ages are one of the target groups of the BfR.



The BfR assesses risks in many areas of daily life and also provides information to the public in the form of short films that can be accessed in the media library.

From a possible danger to objective assessment – a simplified description of the risk assessment procedure



## BfR Committees

Fifteen scientific expert committees advise the BfR in questions relating to the safety of food and feed, chemicals and products, as well as risk communication. They consolidate the expertise available in Germany at the highest scientific level to form an external scientific quality assurance system for the assessment tasks undertaken by the BfR. In this way, they can be called upon for advice as an established network not only in times of crisis.

The approximately 200 committee members are external, independent experts who support the work of the BfR in an advisory capacity and on an honorary basis. They come from universities and other research institutions, national and regional authorities, as well as trade and consumer associations.

The BfR Committees each have at least ten members who elect a chairperson from among their ranks. The BfR provides support by taking over management tasks. The minutes of the meetings, which outline the scientific opinions and results of the committees' consultations, are made available to the general public on the BfR website. What makes them fundamentally different from other insti-

tutions in the EU, such as the European Food Safety Authority (EFSA), is that in line with their rules of procedure, the BfR Committees play a purely advisory role and do not make any risk assessments.

In 2013, suitable experts who had previously applied in an open process were selected by the external appointing panel for the current appointment period from 2014 to 2017 and appointed by the BfR President with a certificate. The appointing panel is made up of members of the BfR Scientific Advisory Board, the chairs of the German Research Foundation's Senate Committees for the Health Assessment of Food and of Substances and Resources in Agriculture and a representative of the Senate of Federal Research Agencies.

**i** *The tasks of the BfR Committees, list of members and rules for maintaining independence:*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute**  
 > **The BfR-Committees**

*Other committee at the BfR:*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute**  
 > **National Breastfeeding Committee**



*The members of the BfR Committees support the work of the BfR as external, independent experts.*

The National Reference Laboratories ensure that work is performed throughout Europe in line with uniform standards, an aspect which is of particular importance where the monitoring and control of foods are concerned.

### Reference laboratories

National reference laboratories work on standards for food monitoring in order to ensure the safety of food products throughout the entire EU. For this purpose, 19 reference laboratories in the areas of food and feed safety and food hygiene are located at the BfR. They are divided into two groups: national reference laboratories in accordance with Regulation (EC) 882/2004 and other BfR laboratories with reference function.

The reference laboratories located at the BfR pursuant to regulation (EC) 882/2004 are involved in both food chemistry analysis as well as molecular biological and microbiological testing. They are appointed by the Federal Ministry of Food and Agriculture (BMEL). Their work is based on various legal regulations such as the German Food and Feed Code as well as laws and regulations on consumer products.

The main job of reference laboratories is to develop and validate methods (including inter-laboratory comparisons) and to perform suitability tests among official laboratories for the purpose of quality assurance. The creation of national reference laboratories guarantees that work is carried out in line with uniform standards all over Europe. This is of particular importance for the monitoring and control of food products, which are fundamentally covered by the principle of the free movement of goods within the European Union. The national reference laboratories also act as a national link between the community reference laboratories of the EU and the food monitoring authorities of the EU member states.

Alongside these national reference laboratories based on EU law, there are also other laboratories at the BfR with reference function. These include the Reference Laboratory in the Network of Genetically Modified Organisms, the Senior Expert Office for the Import Control of Wine in accordance with the Wine Monitoring Ordinance, the Zoonoses Reporting unit and the Consiliary Laboratory for Leptospirae and Yersinia.

**i** List of the national reference laboratories active at the BfR, as well as the other laboratories with reference function: [www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute** > **Reference Laboratories**



*The reference laboratories develop and validate new testing methods for the detection of substances and microorganisms that are relevant to health.*

## The exchange of information and the establishment of uniform techniques and standards also make a direct contribution towards ensuring a high level of safety of imported goods.

### International cooperation

As a result of globalisation flows of goods have fundamentally changed and are subject to highly dynamic trends. New raw materials and products are reaching the German market. Quality and safety standards in the countries of origin are often not comparable with German or European standards. Thus, food and product safety can only be assured through an international approach.

The BfR masters this challenge through close cooperation with ministries and partner authorities throughout the world. Information exchange and establishment of uniform procedures and standards contribute directly to a high level of safety, also for imported products. In addition, the creation of effective structures for risk assessment and risk management in the partner countries leads to a sustainable improvement of the situation, thus benefitting consumers all over the world.

The supervisory ministry, the Federal Ministry of Food and Agriculture (BMEL), attaches great importance to the continued strengthening of international cooperation. International activities and regional priorities are closely coordinated between the BMEL and the BfR. Currently, the BfR has cooperation agreements with 47 partners in 28 countries. One main emphasis in this regard lies in maintaining close contacts with its European sister authorities. Thus, the BfR has enjoyed many years of partnership with ANSES (France), DTU (Denmark), AGES (Austria) and NVWA (Netherlands) and established new cooperations with other agencies, such as AECOSAN (Spain), ASAE (Portugal) and EVIRA (Finland). Another focus is collaboration with important non-European trading and cooperation partners. In this context, the collaboration with China must be emphasised with 6 cooperation agreements. In November 2016, the BfR participated again – together with EFSA – in the important “China International Food Safety & Quality Conference” (CIFSQ) with over 900 attendees from 23 countries. The conference discussed topics relating to food safety in China

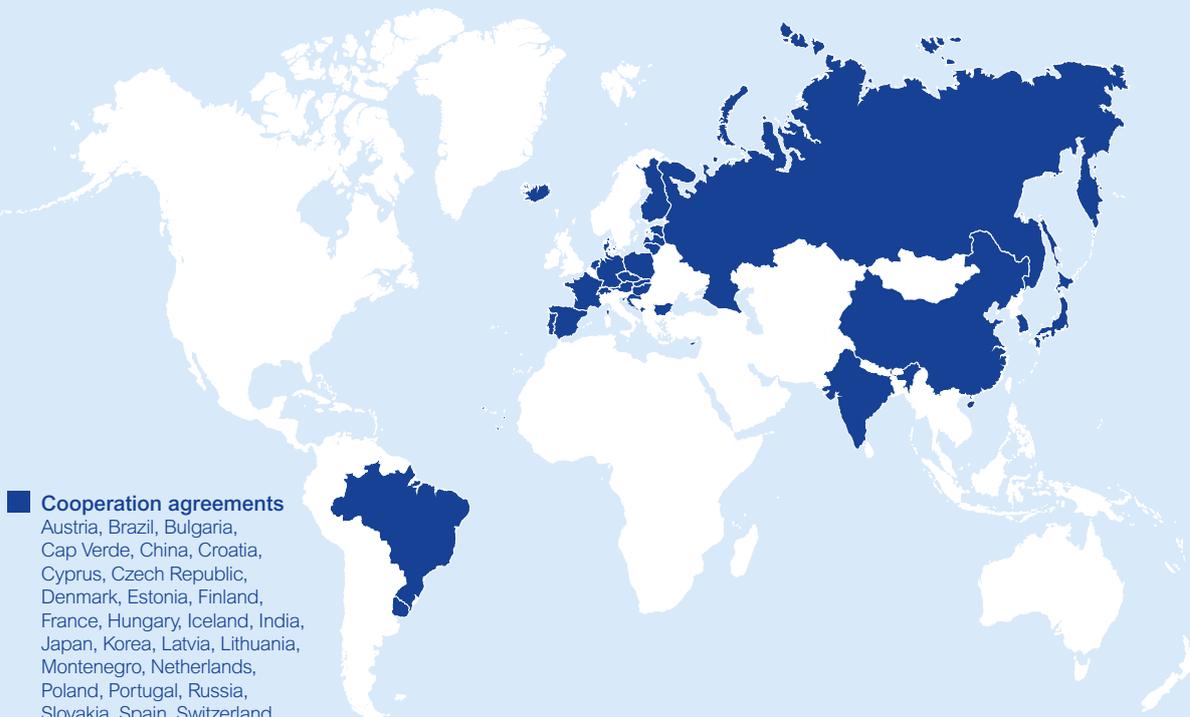


and worldwide – legal requirements, for example, technical challenges and current “trend topics”. The BfR actively participated in the conference with various presentations on “Current Risk Assessment of Global Food Chains”.

Cooperation with partner institutions usually takes place in the form of mutual visits, joint symposiums and the exchange of information. Moreover, the BfR implements training courses for scientists, for example within the scope of the BfR-Summer Academy or in the so-called “Scientific Career Programme”. In the context of twinning projects or bilateral agreements, BfR employees further support the partner countries on-site with the exchange of know-how and capacity building in the field of food safety.

Cooperation with the European Food Safety Authority (EFSA) is of particular importance. The BfR is represented on many EFSA committees, thus making a decisive contribution towards food safety in Europe. As the EFSA Focal Point in Germany, the BfR coordinates the exchange of scientific information between EFSA and the authorities responsible for food and feed safety in Germany, as well as players from trade and industry, politics, science and consumer associations.

## Food safety is globalised – BfR cooperation ventures



### ■ Cooperation agreements

Austria, Brazil, Bulgaria, Cap Verde, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, India, Japan, Korea, Latvia, Lithuania, Montenegro, Netherlands, Poland, Portugal, Russia, Slovakia, Spain, Switzerland, Uruguay and EFSA (Focal Point), ILRI Livestock Research Institute (headquartered in Kenya) and the Joint Research Centre of the European Commission

Correct as of: September 2017

During 2016, the following projects were of great importance for this cooperation:

1. EU-FORA – The European Food Risk Assessment Fellowship Programme:  
This EFSA scholarship scheme provides support in the development of scientific assessment resources and the scientific community within the EU. The BfR supports this initiative through its involvement in the committee tasked with preparing the programme for chemical and microbiological risk assessment. This programme will be launched in 2017, and the BfR will accept four fellows.
2. International Capacity Building:  
Building of international capacities for risk assessment to improve food safety and consumer protection in light of the rapid developments in global trade and travel – by means of the provision of advice to policymakers, scientific cooperation and information exchange, joint scientific meetings and training activities.
3. EU Risk Assessment Agenda (RAA):  
Documentation of project proposals in the EU RAA Catalogue. The BfR welcomes the EU RAA as a long-term initiative providing an overview of the actors in this field and has itself submitted 27 project ideas.

**i** The BfR's EU Almanac, now in its fourth edition, contains information on the structures and institutions of food safety in 38 European countries and on the European level. This English-language publication is translated into German, Chinese, French, Portuguese and Spanish.  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > Publications > Brochures > EU-Almanac



## Quality management

Why does the BfR need a quality management system? In order to ensure quality, the Institute needs structures. These structures help the BfR to adhere to key principles such as transparency and comprehensibility, and they underpin the high quality of BfR opinions. The BfR has been building quality management structures since 2002, initially in line with DIN EN ISO/IEC 17025 and later on the basis of DIN EN ISO 9001.

The standard DIN EN ISO/IEC 17025 specifies technical and personnel requirements for test and calibration laboratories, thereby ensuring high quality standards on international level. Accreditation serves to confirm high-quality and reliable results.

DIN EN ISO 9001 requires the definition of work routines and responsibilities with the aim of paving the way for a high quality of work and of the resulting work products. This applies not only to the scientific work of the BfR but also to the Institute's administrative set-up and its communication activities. The quality criteria and compliance with these criteria are monitored in internal and external audits with the aim of continual improvement.

These two quality certifications require regular, independent verification. The certification must be reconfirmed every three years and accreditation every five. In addition to this, so-called monitoring audits are conducted annually. The quality-assured performance of tasks in line with DIN EN ISO 9001:2008 was last confirmed in June 2016 by the independent certifying body TÜV Nord Cert GmbH. Compliance of the scientific laboratories with the standard DIN EN ISO/IEC 17025:2005 was last reviewed by the German accreditation body DAkkS in November 2017.

**i** Information on quality management at the BfR:  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute**  
 > **Quality management**



*The BfR performs its work in line with internationally recognised standards, thereby guaranteeing the high quality of products and processes.*

## Good Laboratory Practice (GLP): more than 25 years of the GLP Federal Bureau

For more than 25 years now, the principles of Good Laboratory Practice (GLP) have made a key contribution to quality assurance in the fields of health, environmental safety and support of animal protection. Today, the quality and integrity of data from non-clinical experimental safety studies to assess risks for humans and the environment are underpinned by compliance with GLP, paving the way for mutual recognition of data between many countries. The starting point in Germany was the amendment of the German Chemicals Act in March 1990 which transposed the principles of Good Laboratory Practice (GLP) introduced by the OECD and incorporated in EU Directives into German law (Art. 19a–d of the German Chemicals Act (ChemG)). Responsibility for monitoring compliance with GLP was assigned to the respective federal states in Germany (“Laender”). On federal level, these responsibilities lie with the GLP Federal Bureau. The Bureau is subject to supervision by the Federal Ministry of the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).

The GLP Federal Bureau began its work at the end of 1990 as part of the Federal Health Office (BGA), continued this work at the Federal Institute for Consumer Protection and Veterinary Medicine (BgVV), and has been part of the BfR as the “GLP Federal Bureau and Quality Management” Unit since the BfR was set up. The main tasks of the GLP Federal Bureau at the BfR are the coordination and harmonisation of GLP-related matters and maintaining a list of all GLP-monitored test facilities in Germany, involvement in international GLP working groups of the European Union and the OECD, and the monitoring of certain GLP test facilities in Germany and abroad. With regard to its monitoring activities, the team at the GLP Federal Bureau conducted 68 inspections by the end of 2016, whereof 48 were conducted in 30 test facilities outside Germany.

**i** Information on the GLP Federal Bureau at the BfR:  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute**  
 > **GLP Federal Bureau**

## Stakeholder survey: use and awareness of BfR information

In 2016, the German Federal Institute for Risk Assessment (BfR) conducted its fourth evaluation survey on consumer health protection as well as on its work and on the public awareness of the Institute.

The survey polled around 1,000 representatively selected German-speaking persons aged 14 and above as well as 400 experts from the fields of politics, science, the media and relevant associations. As was to be expected, it is primarily the experts who are familiar with the BfR. 87 percent of respondents know the Institute. Awareness of the existence of the BfR is increasing among the general population: in 2004 only 3 percent of the population had heard of the BfR; by 2016, this figure had risen to roughly 30 percent. 32 percent of the general population and 65 percent of the experts who are familiar with the BfR are also aware that the BfR publishes information on consumer health protection. Eleven percent of the general population and 51 percent of the experts make use of this information. The majority of experts who use the

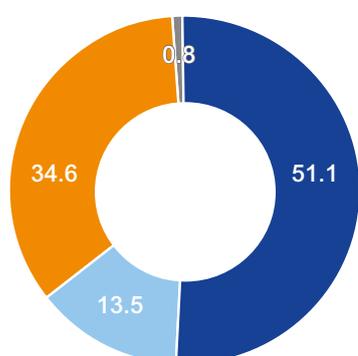
information published by the BfR say it is important or very important for their day-to-day work (70%) and are satisfied or very satisfied with the quality of the information (78%).

The most well-known and most frequently used means of communication of the BfR among the general public are the opinions and communications as well as brochures and flyers. Alongside the opinions and communications, the BfR-website is also well-known and frequently used by the experts.

**i** The diagrams are taken from the latest survey report (in German only), which was published in the "BfR-Wissenschaft" series: [www.bfr.bund.de](http://www.bfr.bund.de) > Risikokommunikation > Publikationen > BfR-Wissenschaft 2017

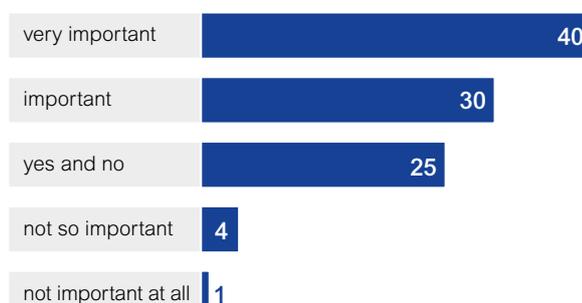
### Findings among experts

"Are you aware that the BfR publishes information on consumer health protection? Have you ever used this source of information?"



■ use it                      ■ aware of it but don't use it  
 ■ not aware of it        ■ don't know/no answer

"How important is this information for you in your day-to-day work?"



Left: in percent of all polled experts who are familiar with the BfR, if only by name (n = 356);

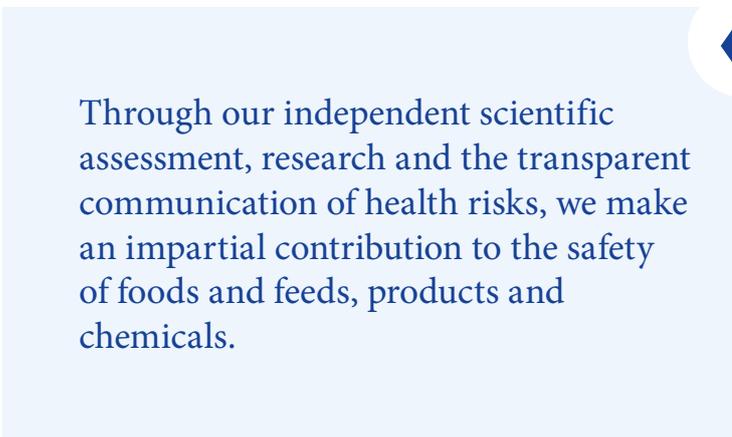
Right: in percent of all polled experts who use BfR information (n = 182)

## Making the world a safer place for people to live: the new mission statement of the BfR

In 2016, the BfR set itself the goal of updating its mission statement. This decision was motivated by several factors, such as a wide range of new tasks, increasing internationalisation and a number of new employees. The new mission statement was drawn up together with the personnel at the BfR.



The protection of human health is at the centre of our work.



Through our independent scientific assessment, research and the transparent communication of health risks, we make an impartial contribution to the safety of foods and feeds, products and chemicals.



We research and advise in order to minimise animal experiments to an essential minimum and to guarantee the best possible level of protection for laboratory animals.

**i** Mission statement of the BfR: [www.bfr.bund.de/en](http://www.bfr.bund.de/en) > The Institute > Mission statement

«

The results of our work promote a factual and social discourse, thus providing decision-makers with a scientifically well-founded basis.



»

Our work is characterised by an open and respectful approach. Tolerance, reliability and mutual appreciation form our common foundations.



«

On this basis, we set scientific standards in consumer health protection so that the world becomes a safer place for people to live.



# Research



Independent application-focused and special-purpose research belong to the core field of expertise of the BfR – because in-house research is a key foundation of the Institute's advisory activities and the precondition for a rapid response in the event of a crisis. It is the only way that the BfR can perform its statutory remit to a high scientific standard and provide expert advice to political decision-makers in line with the latest research.

The BfR is independent and ensures transparency in the planning, organisation and performance of all research activities. In order to prevent its research from being influenced by economic interests, the BfR only submits third-party funding applications to public national and European institutions. The strategic concept adopted by the BfR also includes comprehensive quality assurance (see page 14).

The German Council of Science and Humanities (Wissenschaftsrat – WR) rates the research activities of the BfR as mainly “very good” (WR Doc 4906-15, 2015) and also describes the BfR as one of the leading institutions for science-based risk assessment on European and international level. The BfR frequently acts as “lead manager” in the further development and shaping of legislative and harmonisation procedures. Together with other European organisations like the Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail in France (ANSES) and the Food Institute of Danmarks Tekniske Universitet (DTU), the Institute plays a pioneering role in certain fields of research and assessment. On the basis of this expertise, the BfR is involved in numerous national and international research projects.

The German Council of Science and Humanities sees the transfer of knowledge into practical measures as a further key objective of scientific institutions (WR Doc. 3228-113, 2013 and Doc. 5665-16, 2016). The research findings of the BfR are translated into hands-on policy in various ways. Some of these findings are incorporated in legislative proceedings as well as international guidance documents and assessment concepts – and are used in the risk assessment activities of the BfR as well as for topical BfR Opinions and the provision of advice to policy-makers. Moreover, the ring trials conducted at the BfR form the basis for the development of new and the improvement of existing measures, which are then shared with the supervisory authorities of the federal states in Germany (the “Laender”) or utilised at EU level. Many university and non-university research institutions as well as companies in industry draw on the research and development findings of the BfR in the development and assessment of replacement and refinement methods for animal experiments. Last but not least, the transfer of expertise to the real world also takes place via the participation of BfR personnel in various bodies, cooperation with foundations, associations, federations and authorities, and through the public relations activities of the Institute in the form of presentations and publications.

**Application-focused research forms the basis for independent scientific assessment and communication.**



## The BfR possesses an excellent technical infrastructure in the fields of chemical analysis, microbial diagnostics, toxicology and food technology.

The BfR has a modern experimental infrastructure in the fields of chemical analysis, microbial diagnostics, toxicology and food technology. This infrastructure includes an agricultural business with livestock farming and aquaculture, a facility for conducting experimental work on animals, and modern molecular and cellular biology laboratories as well as protein biochemistry laboratories for the development of alternative and replacement methods to animal experiments. In the laboratory for large and small animals, work can be performed up to safety level S2/L2, while microbiological tasks are possible up to stage L3. The laboratory infrastructure is continuously adapted in light of scientific developments and technological options. It was in this way, for example, that the BfR's nano-analytics operations were extended by the addition of

asymmetric flow field fractionation and a ToF-SIMS. Moreover, a high throughput-high content screening system as well as a multiphoton microscope and a superresolution microscope are now available for the identification of toxicological molecular action mechanisms for the development of test methods.

These technical resources allow interdisciplinary testing and analysis along the entire feed, food and product chains. This infrastructure is also made available to external cooperation partners.

**i** Overview of core research areas of the BfR:  
[www.bund.de/en](http://www.bund.de/en) > Research



*The experimental infrastructure at the BfR is in line with the current developments in science and technology.*

## Profile of new third-party funded projects in 2016

The project **“Vet-Twin”** (Strengthening of scientific excellence of the National Veterinary Research Institute in animal health and food chain safety) is supported by the European Commission. The goal is to strengthen the National Veterinary Research Institute (NVRI) in Pulawy, Poland in both scientific and technical terms in the fields of animal health and food safety. To this end, the BfR and Danish Technical University (DTU) staged special courses for senior and junior scientists from the NVRI. This is also designed to improve scientific cooperation between the NVRI, the DTU and the BfR and to promote joint research activities in the future.

In the area of exposure assessment and the assessment of biological risks, the Federal Ministry of Education and Research (BMBF) is supporting the German-Vietnamese network project **“CAMPY-TRACE”** (combined real-time PCR with live/dead differentiation for the quantitative risk assessment of live *Campylobacter*, for use in international monitoring strategies). The project is aimed at developing, validating and implementing a cultivation-independent, direct quantification method for *Campylobacter*. In cooperation with authorities and research institutions in Germany and Vietnam, the method is designed to help to ensure the effective monitoring of *Campylobacter* burdens in the production process for chicken meat.

With its **“Ess-B.A.R.”** project (food safety and resilience of food supply chains in biological hazard situations), the Federal Ministry of Education and Research (BMBF) is supporting a research project geared towards the safety of national and international supply chains. The partners from university and non-university research establishments and companies are attempting to use improved laboratory methods and IT solutions to counter the effects of a large-scale biological hazard situation more effectively by ensuring better analysis of propagation pathways and faster identification of the sources of outbreaks.



*The collaborative “FoodAuthent” project ensures transparency with regard to the origin of food products.*

With the **“FoodAuthent”** project, the Federal Ministry of Food and Agriculture (BMEL) is supporting the development of a system for the collection, analysis and utilisation of product authenticity data in the food sector in order to increase the safety and transparency of future food supply flows to the consumer. In cooperation with public and private sector research establishments, the aim is to create the necessary framework conditions and incentives for the routine use of fingerprinting techniques.

With the project **“Processing”** (Database of processing techniques and processing factors compatible with the EFSA food classification and description system FoodEx 2), the European Food Safety Authority (EFSA) is promoting the development of a database to help the risk assessment experts use the level of pesticide residues on raw materials as a basis for deriving the level of pesticide residues in processed foods.

With the **“MyToolBox”** project (Safe Food and Feed through an Integrated ToolBox for Mycotoxin Management), the European Commission is supporting a consortium project involving universities, farmers, companies and authorities with the aim of developing new intervention strategies to reduce harvest losses due to fungal infestation and mycotoxin contamination. The idea is Web-based and geared towards providing the respective users along the feed and food chain with tools and recommendations for measures that can prevent harvest losses as effectively as possible.

# Personnel and training



Consumer health protection and the protection of laboratory animals were continuously strengthened and expanded in 2016, and this process was accompanied by a significant increase in personnel, with the number of employees rising from 801 to 855 during the course of the year. About two thirds of the employees are women. Alongside the operational activities of the personnel unit, other focal points of the unit's work in 2016 were a survey on job satisfaction at the BfR, the expansion of the programme for refugee and guest scientists, the further development of the online job application management system and an increased presence at job fairs as part of the Institute's personnel recruitment efforts.

### **Personnel recruitment: expansion of the online application management system and increased presence at job fairs**

226 jobs were advertised in 2016, resulting in 7,144 applications. The number of job advertisements increased by around 80 percent, and the high number of applications confirms the attractiveness of the BfR as an employer. 85 percent of applications were received via the online application management system launched in April 2015. The resources freed up by the new system were successfully re-invested in the ongoing modernisation of the BfR administration and the expansion of international activities in the field of personnel recruitment. An English-language version of the online application platform was also introduced in order to reflect the increasing internationalisation of the Institute and ensure effective contact with qualified personnel from outside Germany. In addition, the BfR created an English-language platform for the annual guest scientist programme. The application platform for apprenticeship places – also newly created – and the planned reappointment of the relevant committee for 2017 also ensure more systematic communication with potential applicants in these areas.

One of the activities of the Institute in the field of personnel recruitment and personnel marketing is participation at job fairs, specifically for the target group of young scientists. In addition to its now traditional presence at the jobvector career day and T5 fairs, the BfR has also stepped up its international activities in this area. In 2016, for example, the Institute was once again at the Talent Fair of the GAIN Annual Convention in the USA and also participated in the Naturejobs Career Expo in London. The aim is also to underpin the attractiveness of the BfR and raise the Institute's profile outside Germany and thereby to attract high-performing up-and-coming scientists.

### **Personnel development: survey on job satisfaction**

Assessment of job satisfaction by the employees of the BfR is important in order to analyse the strengths and weaknesses as well as the potentials and risks of the Institute. For this reason, a BfR-wide survey of employees was conducted in 2016, and this survey will be repeated on a regular basis in future. The first round of the survey was Web-based and had an encouragingly high participation rate of 74 percent. The questions were mainly about work motivation, job satisfaction and working ability. The aim of this kind of regular brief survey on job satisfaction is not only to provide a snapshot but also and above all to supply insights into trends and changes over time. This survey therefore serves as a kind of “job satisfaction barometer”. The findings underline the high level of motivation among BfR personnel. The overwhelming majority of employees like working at the BfR and enjoy their jobs.

**The BfR is present at international job fairs with the aim of recruiting up-and-coming young scientists.**



## Integration and advancement: expanding the programmes for refugees and guest scientists

The programmes launched in 2015 for guest scientists and refugees were successfully continued and expanded in 2016.

In order to strengthen international cooperation and promote up-and-coming young scientists, the BfR once again offered promising talents in the natural sciences the opportunity to spend three months with our Institute in 2016. The 10 scientists who took advantage of this scheme came from Kenya, Ethiopia, Nigeria, Uganda, China, Ireland, France, Brazil and Ukraine. The increasing popularity of the programme is also reflected by the number of applications. While 43 applications were received for 2015, this number rose to 90 for 2016, and 150 up-and-coming scientists had already applied to participate in the programme in 2017 by the end of 2016.

Like many employers in the public and private sector, the BfR as a scientific institution is also helping to integrate people from the civil war-torn regions of the Middle East seeking refuge in Germany. The goal is to provide the refugee scientists with the necessary skills for the scientific employment market in Germany. This programme was originally implemented as an internship programme, but the BfR is now offering limited employment contracts to successful interns in order to prepare them more systematically for future employment in Germany.



*At the BfR, refugee scientists have the opportunity to obtain the necessary qualifications for employment in Germany.*

In this way, the BfR succeeded in qualifying five young scientists from the crisis regions of Syria and Afghanistan up to the end of 2016. They completed or are in the process of completing internships in the field of chemical analysis of consumer products and food-contact materials as well as in the area of the toxicological assessment of food ingredients. Following their internship, four of them were given a limited employment contract for a period of 6 or 12 months.

At the conference of the “Companies Integrate Refugees” network in December 2016, the BfR was presented as a best practice example on account of its programme to promote successful company-based measures aimed at the integration and professional qualification of refugees.

## Working at the BfR

To fulfil its tasks, the BfR is particularly reliant on committed and motivated employees who contribute their specific knowledge and skills in each field to make the BfR an internationally recognised institute for consumer protection.

People with different professions and experience, most of them with a background in scientific disciplines, such as medicine, veterinary medicine, pharmacy, biology, chemistry, biochemistry, food chemistry and nutritional sciences, work together at the BfR. Cooperation is distinguished by a focus on objectives, self-reliance, loyalty and performance orientation.



### Reconciling work and family: re-auditing process

The BfR promotes the compatibility of career and family and has been certified as a family friendly employer by berufundfamilie Service GmbH since 2009. The compatibility enhancing measures that are already in place include flexibility of working hours, parent-child offices at all locations, further training opportunities for employees absent for family reasons, telework options and cooperation with a family service provider for the arrangement of childcare and support for family members who are in need of care. As of 2016, the BfR also offers special support services for “dual career couples”.



*The BfR enables its employees to take on responsibility both in their family and in their career.*

### Apprenticeships

The BfR offers apprenticeship for animal carers, office management clerks, chemical/biological lab assistants, IT specialists for system integration and installation mechanics for plumbing, heating and air-conditioning. Nine trainees completed their apprenticeships in 2016 with good to very good results.



*The BfR actively promotes vocational training with the aim of ensuring a future recruitment pool.*



# Key data

How many scientists does the German Federal Institute for Risk Assessment employ? Which committees do they serve on? How does the Institute finance itself? The answers to these questions are provided in the following chapter on the key data of the BfR. The figures all relate to the reporting year 2016.

## Personnel



 Scientists	345
 Administrative staff	206
 Technical assistants	99
 PhD candidates	56
 Animal carers	25
 Apprentices/trainees	20
 Other	104

## Participation in bodies

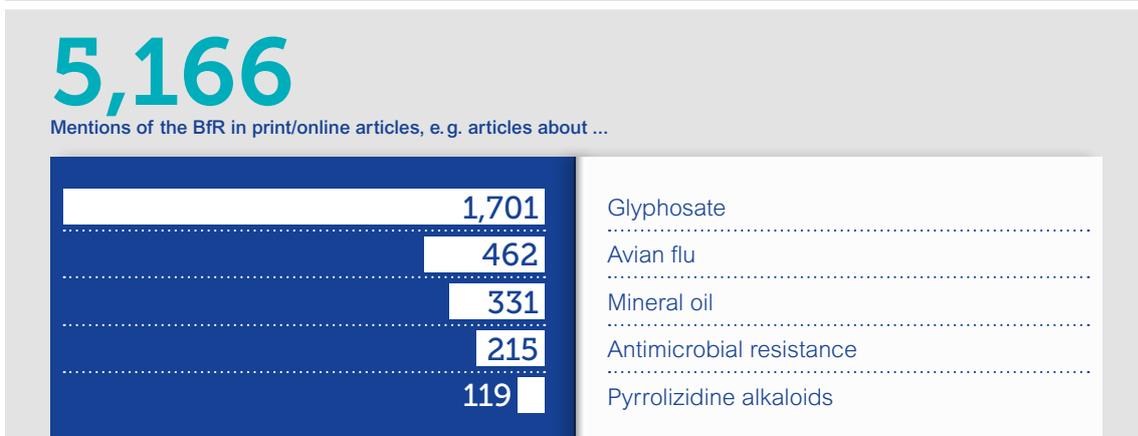
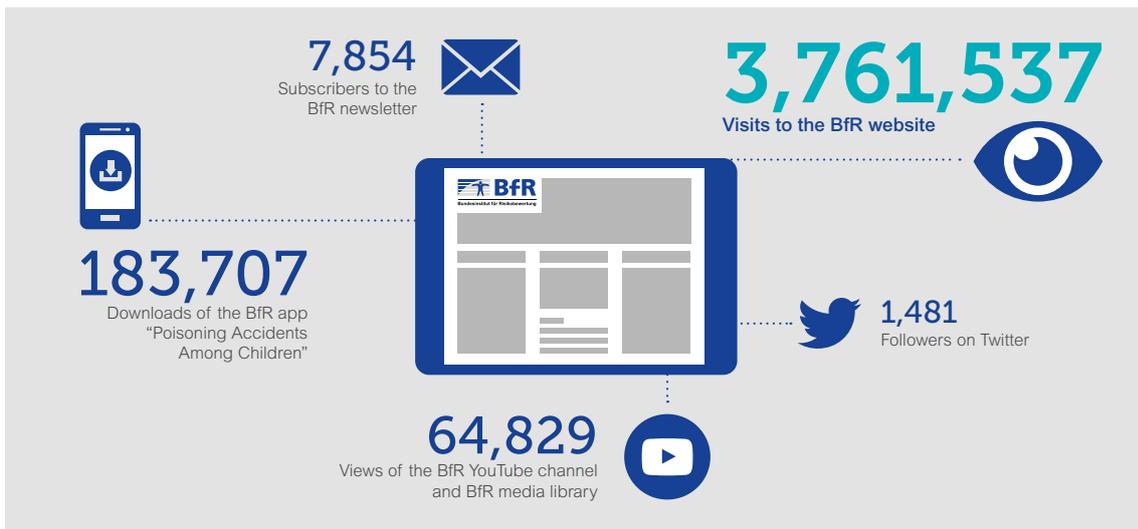
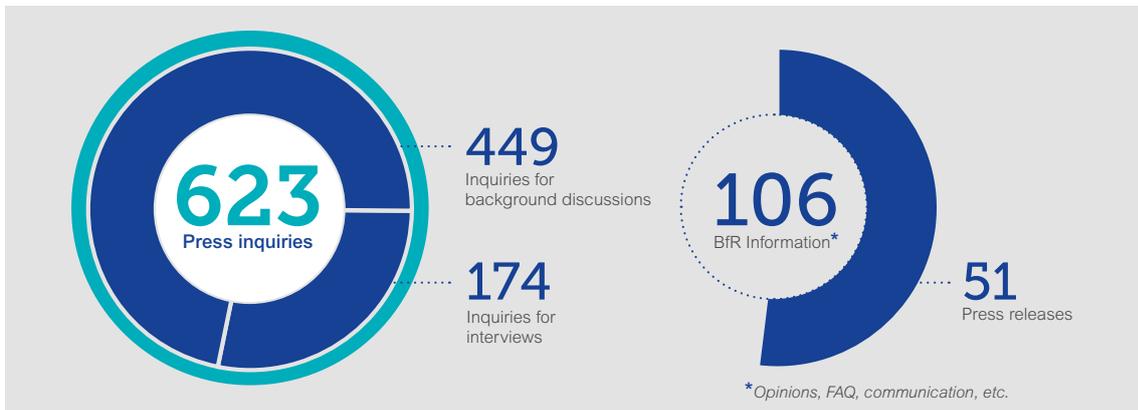
National	Number
Federal bodies	41
Joint Federal Government/"Laender" bodies	52
Bodies of the BVL (Federal Office of Consumer Protection and Food Safety)	25
Bodies of other institutions	104
<b>Total number</b>	<b>222</b>

European level	Number
Bodies of the European Commission	42
Bodies of the European Food Safety Authority (EFSA)	40
Bodies of the European Chemicals Agency (ECHA)	15
Bodies of other European organisations	28
<b>Total number</b>	<b>125</b>

Worldwide	Number
WHO/FAO: bodies of Codex Alimentarius	17
WHO/FAO: other bodies	2
Bodies of other United Nations specialised agencies	10
OECD bodies	43
Other bodies involved in global standardisation activities	10
<b>Total number</b>	<b>82</b>

A total of **855 employees**

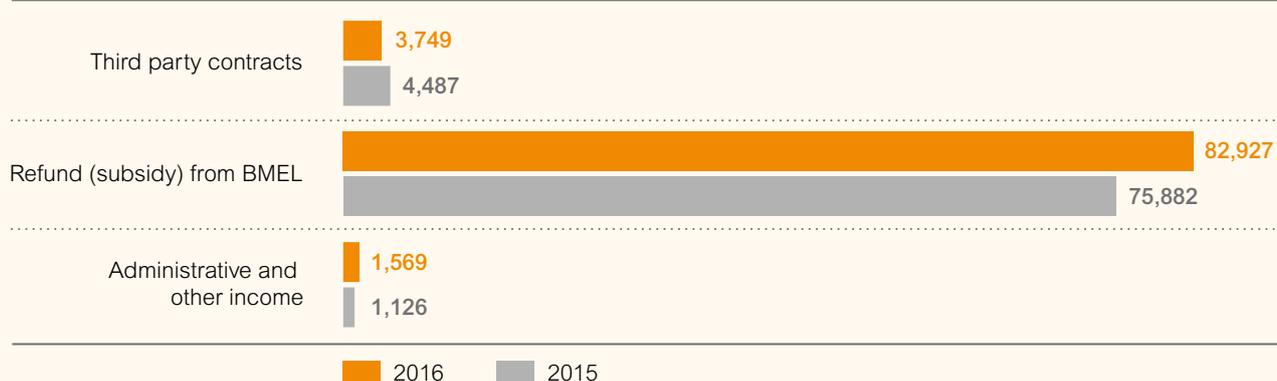
## Press activities of the BfR



© German Federal Institute for Risk Assessment (2017), Freepik

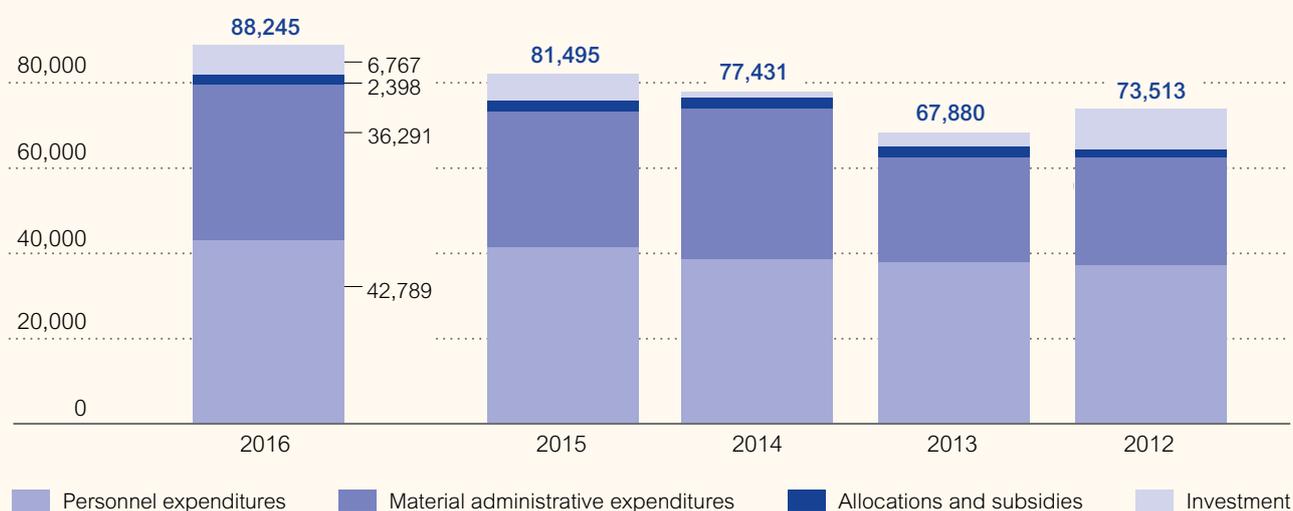
## Budget

### Income (in thousands of euros)



In 2016, the BfR had a total budget of roughly **88 million euros.**

### Expenditures (in thousands of euros)



### Selected expenditures

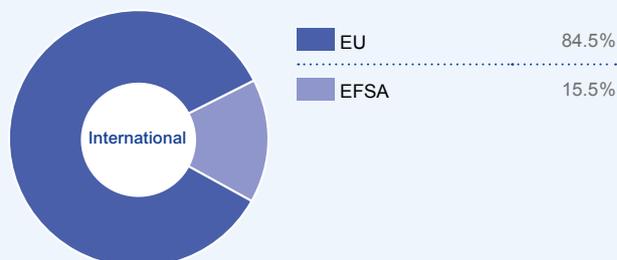
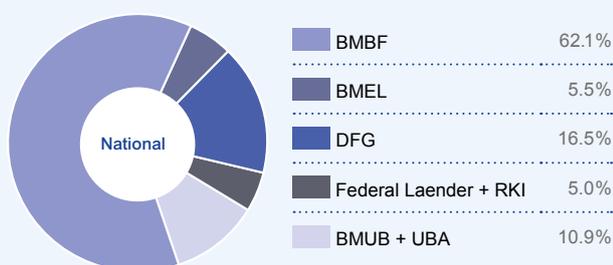
Scientific collections and libraries	457,670 €
Initial and further training	315,721 €
Public relations work, publication and documentation activities	739,404 €
Conferences, trade fairs and exhibitions	272,860 €

## Research



In 2016, the grant for third-party funded projects was **3.7 million euro**, with international research projects accounting for 40 percent of this spending.

Third-party funded projects	Number	Grant (figures in thousands)
International (EU, EFSA etc.)	20	1,518 €
National (BMBF, DFG, BMEL etc.)	30	2,231 €
<b>Total</b>	<b>50</b>	<b>3,749 €</b>



## Publications

	Number
Book publications	6
Contributions to compilations	7
Articles in journals	213
Contributions to conference proceedings	84
Poster contributions	220
Presentations (conference speakers)	721
Dissertations/Postdoctoral thesis/Master/ "Diplom" degree/Bachelor	68
Reports/EFSA	19

**721 presentations** were held in 2016.

# Opinions

The BfR Opinions are risk assessment reports. They comprise the elements of a risk assessment, describe the uncertainties and their causes, and outline goals and strategies to minimise risks.

## Expert opinions

<b>Total number</b>	<b>2,940</b>	
Assessments in prescribed procedures, e. g. marketing authorisation procedures addressed to the Federal Office of Consumer Protection and Food Safety (BVL) or to the Federal Institute for Occupational Safety and Health (BAuA)	2,000	<b>The 2,000 assessments in prescribed procedures include:</b>
Expert opinions for supervisory federal ministries (BMEL, BMUB, BMVI)	350	Assessments pursuant to pesticides legislation
Expert opinions in conjunction with international procedures (EU, OECD, WHO) for the assessment of chemical substances and testing methods, e. g. on alternatives to animal experiments	150	Assessments of intoxication cases pursuant to § 16 e Chemicals Act (ChemG)
Expert opinions for the European Food Safety Authority (EFSA) and EFSA Focal Points of other Member States	20	Opinions on chemicals pursuant to chemicals legislation (REACH)
Other expert opinions for public authorities and courts outside prescribed procedures	230	Assessments pursuant to biocides legislation
Other opinions, mainly for associations, individuals, NGOs	190	Opinions on feed procedures stipulated in feed legislation
		Opinions on exemptions from consumer protection provisions in food legislation, §§ 54, 68 Food and Feed Code (LFGB)
		Other risk assessments in prescribed procedures
		900
		0
		380
		490
		90
		50
		90

*Note: the figures provide some insight into the type and scale of expert opinions prepared by the BfR in 2016. They describe OUTPUT. A low number of risk assessments may be more valuable for consumer protection – because of the subject matter and scientific quality – than a multitude of risk assessments. The figures do not, therefore, permit any or only limited conclusions about the OUTCOME of the activities of the BfR.*

The risk assessments of the BfR are also the subject of the risk communication activities of the Institute. The assessments are published in response to specific concerns or in crisis situations – because the BfR is required to make assessments of general interest available to the public unless there is a need to protect confidential information. The BfR Opinions published in 2016 include the following.

### Selected opinions

**11 April 2016**

Opinion No. 018/2016

Diethylene glycol (DEG) in toothpaste:  
the use of DEG is no longer permitted in cosmetics

**13 April 2016**

Opinion No. 008/2016

Raw milk:  
boiling protects against infection with *Campylobacter*

**15 April 2016**

Opinion No. 022/2016

Epoxide resin coatings of cans:  
substance transfer to oil-containing foods possible

**20 June 2016**

Opinion No. 029/2016

Residue levels of plant protection products in honey do not pose a health risk

**5 July 2016**

Opinion No. 019/2016  
in coordination with the RKI

Possible health risks from contaminated foods in hospital kitchens  
can be minimised through suitable measures

**10 August 2016**

Updated Opinion No. 023/2016

Levels of styrene oligomers measured in food simulants show that  
health risks are unlikely

**31 August 2016**

Opinion No. 026/2016

Assessment of the findings of the National Residue Monitoring Plan  
and the Import Monitoring Plan 2014:  
no health risks expected

**28 September 2016**

Opinion No. 030/2016

Pyrrolizidine alkaloids:  
Levels in foods should continue to be kept as low as possible

**29 November 2016**

Opinion No. 034/2016

Tobacco-free water pipes can also pose a risk to health

# Events

The BfR Academy organises a large number of events every year on various topics from the BfR's range of tasks. The goal of these events is to promote an exchange with various target groups and to inform about the BfR's assessments and research results. 126 events were staged in 2016. Alongside scientific dialogue and information events, there were also several training courses for multipliers.

**i** More information: [www.bfr.bund.de/en](http://www.bfr.bund.de/en) > Events



15 to 24 January 2016

## The BfR at International Green Week in Berlin

Over a period of ten days, BfR experts answered the questions of consumers on the topics “Game – sure, as long as it's safe” and “Wine – sure, as long as it's safe”. Among other things, visitors had the chance to experience various wine malodours such as cork taint on an “odour course”.



22 January 2016

## Science Lunch – What's in Our Food?

At the first BfR Science Lunch, journalists were informed about potential risks posed by various food products. In a presentation held parallel to the lunch, different topics were outlined – matching the dishes served – such as heavy metals in fish or antimicrobial resistance.



*During laboratory tours and poster presentations, the journalists had the chance to discuss topics with experts in more detail.*



6 to 8 April 2016



**Further training course for the public health authorities**

The BfR lecture hall once again had a full audience this year. Many experts from the public health authorities took the opportunity to talk to employees of the Robert Koch Institute, the Federal Environment Agency and the BfR.



24 May 2016

**Insects as Food and Feed – Food of the Future?**

In Europe, insects are generally not eaten by humans or used as feed for farm animals. But this is an area where a public debate is beginning to emerge – due to the claimed efficiency of production options and the favourable nutrient make-up of insects. There was lively discussion at the BfR Symposium on the potentials and possible risks of the use of insects for food and feed.

**BfR-Summer Academy**

The fifth BfR-Summer Academy was attended by 37 experts from 22 countries in Asia, Africa, Europe and South America. The participants and speakers exchanged experiences, discussed methods for risk assessment and risk communication, and put these methods into practice in working groups.



27 June to 7 July 2016



Information events

Further training courses

Scientific dialogue



*In what quantities do we ingest desirable and undesirable substances on average through our food? The staff in the BfR MEAL Study kitchen is cooking, frying and baking in order to answer this and other questions.*

27 to 28 August 2016



**The BfR at the Federal Ministry of Food and Agriculture on “Open Day”**

On the Open Day at the Federal Ministry of Food and Agriculture, employees from the BfR explained the assessment and authorisation procedure for active substances in plant protection products to interested visitors.

5 to 6 October 2016



**REACH Congress 2016**

The third REACH Congress took place in October, and the core topic this time was consumer protection under REACH. National and international experts involved in the REACH process on different levels outlined and discussed what they saw as the successes and weak points of the EU Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

20 October 2016

**Opening of the BfR MEAL Study kitchen**

In 2016, the field phase of the BfR MEAL Study was launched. The occasion was marked by the opening of the study kitchen in Berlin-Marienfelde. The BfR experts explained the schedule and the aims of the BfR Meal Study to guests from the worlds of politics, science and the media.





**6<sup>th</sup> BfR Stakeholder Conference  
“Scientific political consulting”**

At the BfR Stakeholder Conference, representatives of different institutions working in the scientific field looked at the role that the provision of scientific advice to policymakers can and should play.

18 November 2016



**BfR Symposium “New Technologies for  
Genome Modification – Potential, Limits and  
Social Challenges”**

In the last few years, new molecular biology technologies have been developed that can modify, cut out or insert genetic sequences of living organisms far more cheaply, faster and more accurately than older methods. The speakers and attendees at the BfR Symposium in December 2016 discussed the potentials and risks of these methods for consumers.

6 December 2016



Information events

Further training courses

Scientific dialogue

# Annex

## Third-party funded projects of the BfR in 2016

### Research on exposure assessment and the assessment of biological risks

Period	Acronym	Topic
01/2014–04/2017	MedVetStaph-2	Network project: MedVet-Staph – MRSA in the food chain
01/2014–04/2017	RESET 2	RESET II network project: molecular epidemiology of new resistance mechanisms and quantitative risk assessment of extended-spectrum $\beta$ -lactamases (ESBL), AmpC $\beta$ lactamases and carbapenemases in <i>Enterobacteriaceae</i> from the food chain
06/2015–05/2018	NutriAct	Nutritional Intervention for Healthy Aging: Food Patterns, Behaviour, and Products
11/2015–11/2018	EsRAM	Development of measures for reduction of antibiotic resistant bacteria along the entire poultry production chain (EsRAM)
01/2016–12/2016	Leptospirose	Consiliary Laboratory for Leptospirosis – Diagnostics and Epidemiology
03/2016–02/2019	Rotaviren	Characterisation of the zoonotic potential of poultry rotaviruses
04/2016–03/2019	CAMPY-TRACE	Combined real-time PCR with live/dead differentiation for the quantitative risk assessment of live <i>Campylobacter</i> , applicable for international control strategies
05/2016–12/2018	MolTypList	Molecular typing of <i>Listeria monocytogenes</i> in foods and humans as the basis for efficient risk assessment and combatting listeriosis in Germany
07/2016–08/2019	SAD-ZAMBIA	<i>Staphylococcus (S.) aureus</i> in the dairy food chain in Zambia – combating foodborne disease and antimicrobial resistance in humans

Further information
BMBF (FKZ: 01KI1301C)
BMBF (FKZ: 01KI1313B)
BMBF <a href="http://www.nutriact.de">www.nutriact.de</a>
BLE (FKZ: 2817701614)
RKI (FKZ: 1369-365)
DFG (GZ: JO 369/4-3)
BMBF (FKZ: 031B0054A)
BMG (FKZ: GE 2016 03 26)
BLE (FKZ: 2815DOKP04)

#### Abbreviations

<b>BLE:</b>	Federal Office for Agriculture and Food
<b>BMBF:</b>	Federal Ministry of Education and Research
<b>BMEL:</b>	Federal Ministry of Food and Agriculture
<b>BMUB:</b>	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
<b>BMWi:</b>	Federal Ministry for Economic Affairs and Energy
<b>DFG:</b>	German Research Foundation
<b>EFSA:</b>	European Food Safety Authority
<b>EU:</b>	European Union
<b>FKZ:</b>	Project reference number
<b>GZ:</b>	Reference number
<b>LANUV:</b>	State Office for Nature, Environment and Consumer protection North Rhine-Westphalia
<b>NRW:</b>	North Rhine-Westphalia
<b>RKI:</b>	Robert Koch-Institute
<b>UBA:</b>	Federal Environment Agency

### Research on the safety of national and international supply chains

Period	Acronym	Topic
07/2013–12/2016	ZooGloW	Zoonoses and food safety along global supply chains
07/2013–06/2016	SPICED	Securing the spices and herbs commodity chains in Europe against deliberate, accidental or natural biological and chemical contamination
12/2013–11/2018	EFFORT	Ecology from Farm to Fork of Microbial Drug Resistance and Transmission
01/2014–12/2018	Food Integrity	Ensuring the Integrity of the European Food Chain (Food Integrity)
12/2015–08/2016	NRW Warenströme	Project cooperation between BfR and LANUV NRW for the continuous traceability of products
01/2016–12/2018	VET-Twin	Strengthening of scientific excellence of the National Veterinary Research Institute in animal health and food chain safety
05/2016–04/2019	Ess-B.A.R.	Food safety and resilience of food supply chains in biological hazard situations
09/2016–09/2019	FoodAuthent	Development of a system for the collection, analysis and evaluation of product authenticity data

### Research on the detection of contaminants and the assessment of chemical risks

Period	Acronym	Topic
12/2012–02/2016	Schadstoffe Hausstaub	Pollutants in house dust: improving health assessment by determination of the effective dust absorption of children and adults
05/2015–05/2019	EuroMix	European Test and Risk Assessment Strategies for Mixtures (EuroMix)
01/2016–01/2018	ENGAGE	New approaches in identifying and characterising microbiological and chemical hazards
04/2016–04/2020	Ciguatera	Risk characterisation of ciguatera food poisoning in Europe to determine the incidence and epidemiological characteristics of ciguatera cases in Europe
12/2016–08/2018	Processing	Database of processing techniques and processing factors compatible with the EFSA food classification and description system FOODEX 2

### Research on modern methods in toxicology

Period	Acronym	Topic
11/2013–04/2016	Combiomics	Analysis of combination effects of pesticides <i>in vitro</i>
12/2013–06/2016	LivSys	Modelling of the toxome of cultivated human hepatocytes
07/2015–06/2018	Okadasäure	Molecular characterisation of toxicological properties of the marine biotoxin okadaic acid in <i>in vitro</i> models for the human intestinal barrier and liver
11/2015–11/2018	ANIMAL-ID	Animal-ID: development and validation of innovative methods for the traceability and authentication of animal protein in food and feed
12/2015–11/2017	PFOA	Molecular mechanisms of the toxicity of perfluorooctanoic acid (PFOA)
04/2016–03/2018	Einstein-Stiftung	Mechanisms of Critical Illness-Induced Cognitive Dysfunction

	Further information
	BMBF (FKZ: 13N12697)
	EU (FP7-SEC-2012 – 312631) <a href="http://www.spiced.eu">www.spiced.eu</a>
	EU (FP7-KBBE-2013-7-613754) <a href="http://www.effort-against-amr.eu">www.effort-against-amr.eu</a>
	EU (FP7-KBBE-2013-7-613688)
	EU (H2020-TWINN-2015-692131) <a href="http://www.piwet.pulawy.pl/vettwin">www.piwet.pulawy.pl/vettwin</a>
	BMBF (FKZ: 13N13982)
	BLE (FKZ: 2816502914)

	Further information
	BMUB (FKZ: 3712 62 204)
	EU (H2020-SFS-2014-2-633172) <a href="http://www.euromixproject.eu">www.euromixproject.eu</a>
	EFSA (GP/EFSA/AFSCO/2015/01/CT1)
	EFSA (GP/EFSA/AFSCO/2015/03)
	EFSA GA/EFSA/PRAS/2016/01

	Further information
	BMBF (FKZ: 031A267A)
	BMBF (FKZ: 031A270C)
	DFG (GZ: LA 1177/11-1)
	BLE (FKZ: 2816503514)
	DFG (GZ: LA 1177/10-1) DFG (GZ: BU 3060/1-1)
	A-2014-223

#### Abbreviations

<b>BLE:</b>	Federal Office for Agriculture and Food
<b>BMBF:</b>	Federal Ministry of Education and Research
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<b>BMWi:</b>	Federal Ministry for Economic Affairs and Energy
<b>DFG:</b>	German Research Foundation
<b>EFSA:</b>	European Food Safety Authority
<b>EU:</b>	European Union
<b>FKZ:</b>	Project reference number
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<b>LANUV:</b>	State Office for Nature, Environment and Consumer protection North Rhine-Westphalia
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### Research on harmonisation and standardisation of exposure assessments

Period	Acronym	Topic
02/2012–01/2016	TDS-Exposure	Total Diet Study Exposure
04/2015–03/2016	REACH-Compliance Check – Phase II	Availability of health and environmental data for high tonnage chemicals under REACH – Phase II: in-depth REACH compliance check
07/2014–06/2016	Nationales Vergiftungsmonitoring	Research project “National monitoring of intoxication”
04/2015–10/2016	LiquiTabs	Study on hazardous detergents mixtures contained in soluble packaging for single use
08/2016–07/2018	REACH-Compliance – Phase III	Availability of health and environmental data for high tonnage chemicals under REACH – Finalisation of Phase II and Phase III processing: substances with a registration for 100–1,000 t/a

### Research on alternatives to animal experiments

Period	Acronym	Topic
04/2014–03/2017	BB3R-Forschung	Network project: Innovations in 3R Research – Genetic Engineering, Tissue Engineering and Bioinformatics (Berlin-Brandenburg research platform BB3R with integrated graduate education)

### Research on feed safety

Period	Acronym	Topic
06/2013–06/2016	Tannisil	Improving protein quality of roughage in ruminant nutrition by using silage additives on the basis of condensed tannins
01/2014–12/2017	Tender Melamin	Tender Melamin
06/2015–12/2018	Tender Mycotoxine	Provision of technical services to NEN
01/2016–12/2020	Tender Animal feeding	Animal feed – Determination of pyrrolizidine alkaloids in feed materials and compound feed by LC-MS
03/2016–02/2020	MyToolBox	Safe Food and Feed through an Integrated ToolBox for Mycotoxin Management

Further information
EU (FP7-KBBE-2011-5-289108) <a href="http://www.tds-exposure.eu">www.tds-exposure.eu</a>
UBA (FKZ: 3715 67 422 0)
BMU (FKZ: UM14654010)
EU (30-CE-0702569/00-44-SI2.705912)
UBA (FKZ: 3716 67 422 0)

Further information
BMBF (FKZ: 031A262D) <a href="http://www.bb3r.de/projekt/index.html">www.bb3r.de/projekt/index.html</a>

Further information
BLE (FKZ: 2813804310)
EU (SA/CEN/ENTR/522/2013-11 Contract item: 2013-11.11)
EU (SA/CEN/ENTR/520/2013-17)
EU (SA/CEN/ENR/EFTA/523/2013-12)
EU (H2020-SFS-2014-2015/H2020-SFS-2015-2-678012) <a href="http://www.mytoolbox.eu">www.mytoolbox.eu</a>

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## Nanotechnology research: detection, toxicology, risk assessment and risk perception

Period	Acronym	Topic
03/2013–02/2017	NANoREG	A common European approach to the regulatory testing of nanomaterials
11/2013–10/2017	NanoDefine	Development of methods and standards supporting the implementation of the Commission recommendation for a definition of a nanomaterial
10/2014–09/2017	DENANA	DENANA – Design criteria for sustainable nanomaterials
04/2014–03/2017	SolNanoTOX	Determining factors of the toxicity in intestine and liver for two similar sized nanoparticles used in food and packaging: <i>in vitro</i> and <i>in vivo</i> investigation on uptake and mechanisms involved
03/2014–03/2016	CEFIC	Science-based grouping of nanomaterials for industrial application of safe-by-design (CEFIC)
12/2014–11/2016	SeeingNano	Developing and Enabling Nanotechnology Awareness-Building through the Creation and Exchange of enhanced Communication and Visualisation Tools and Guidance for “Seeing at the Nanoscale” (SeeingNano)
12/2015–11/2018	NanoToxClass	NanoToxClass – Establishing nanomaterial grouping/ classification strategies according to toxicity and biological effects for supporting risk assessment
05/2015–04/2018	nanoGRAVUR	nanoGRAVUR – nanostructured materials – Grouping for occupational health and consumer and environmental protection and risk mitigation
09/2015–08/2018	NANoREG 2	Development and implementation of Grouping and Safe-by-Design approaches within regulatory frameworks
05/2016–04/2019	NANOaers	Fate of aerosolised nanoparticles: the influence of surface active substances on lung deposition and respiratory effects

## Scientific cooperation

Period	Acronym	Topic
01/2014–12/2016	EFSA focal point	Germany's national focal point on technical and scientific matters



### Additional information on the projects

Federal Institute for Risk Assessment: [www.bfr.bund.de/en](http://www.bfr.bund.de/en) > Research > Third party projects of the BfR

Information System for Agriculture and Food Research: [www.fisaonline.de](http://www.fisaonline.de) > English

Research database of the BMEL (in German): [www.bmel-forschung.de](http://www.bmel-forschung.de)

	Further information
	EU (FP7-NMP-2012-Large-6-310584) <a href="http://www.nanoreg.eu">www.nanoreg.eu</a>
	EU (FP7-NMP-2013-LARGE-7-604347) <a href="http://www.nanodefine.eu">www.nanodefine.eu</a>
	BMBF (FKZ: 03X0152E)
	DFG (GZ: LA 3411/1-1) DFG (FKZ: LA 1177/9-1)
	EU (LRI-N4)
	EU (H2020-NMP-2014-2015, Grant Agreement number: 646141) <a href="http://www.seeingnano.eu">www.seeingnano.eu</a>
	BMBF (FKZ: 03XP0008A) <a href="http://www.nanotoxclass.eu/project.html">www.nanotoxclass.eu/project.html</a>
	BMBF (FKZ: 03XP0002D) <a href="http://www.nanogravur.info">www.nanogravur.info</a>
	EU (H2020-NMP-2014-two-stage-646221) <a href="http://www.nanoreg2.eu">www.nanoreg2.eu</a>
	BMBF (FKZ: 03XP0064A) <a href="http://www.nanoaers.eu/index.html">www.nanoaers.eu/index.html</a>

	Further information
	EFSA <a href="http://www.efsa.europa.eu/de/about/partnersnetworks">www.efsa.europa.eu/de/about/partnersnetworks</a>

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<b>RKI:</b>	Robert Koch-Institute
<b>UBA:</b>	Federal Environment Agency

## Publications in scientific journals in 2016

### A

- Abraham, K., T. Buhrke, A. Lampen.** 2016. Bioavailability of cyanide after consumption of a single meal of foods containing high levels of cyanogenic glycosides: a crossover study in humans. *Arch Toxicol* **90**: 3, 559–574. <https://doi.org/10.1007/s00204-015-1479-8>
- Ackermann, K., C. Hutzler.** 2016. Tabakregulation – Verbot von Mentholzigaretten und Zusatzstoffen, die das Suchtpotential und die Produktattraktivität erhöhen. *Toxikologie Aktuell* **3**, 1.
- Agampodi, S. B., N. J. Dahanayaka, K. Nöckler, M. S. Anne, J. M. Vinetz.** 2016. Redefining Gold Standard Testing for Diagnosing Leptospirosis: Further Evidence from a Well-Characterized, Flood-Related Outbreak in Sri Lanka. *Am J Trop Med Hyg* **95**: 3, 531–536. <https://doi.org/10.2165/0005-9366-15103>
- Alajmi, A., G. Klein, M. Greiner, N. Grabowski, S. Fohler, A. Campe, T. Scheu, M. Hoedemaker, A. Abdulmawjood.** 2016. Potential role of real-time PCR for detecting *Mycobacterium avium* subsp. paratuberculosis in chronically diseased milking cows: a case control study. *Berl Munch Tierarztl Wochenschr* **129**: 7/8, 304–309. <https://doi.org/10.1158/0008-5472.CAN-15-3464>
- Aleksandrova, K., R. Di Giuseppe, B. Isermann, R. Biemann, M. Schulze, C. Wittenbecher, A. Fritsche, R. Lehmann, J. Menzel, C. Weikert, T. Pischon, H. Boeing.** 2016. Circulating Omentin as a Novel Biomarker for Colorectal Cancer Risk: Data from the EPIC-Potsdam Cohort Study. *Cancer Res* **76**: 13, 3862–3871. <https://doi.org/10.1158/0008-5472.CAN-15-3464>
- Argudin, M. A., B. Lauzat, B. Kraushaar, P. Alba, Y. Ageroso, L. Cavaco, P. Butaye, M. C. Porrero, A. Battisti, B. A. Tenhagen, A. Fetsch, B. Guerra.** 2016. Heavy metal and disinfectant resistance genes among livestock-associated methicillin-resistant *Staphylococcus aureus* isolates. *Vet Microbiol* **191**: 88–95. <https://doi.org/10.1016/j.vetmic.2016.06.004>
- Austel, N., E. J. Eilers, T. Meiners, M. Hilker.** 2016. Elm leaves “warned” by insect egg deposition reduce survival of hatching larvae by a shift in their quantitative leaf metabolite pattern. *Plant Cell Environ* **39**: 2, 366–376. <https://doi.org/10.1111/pce.12619>
- Ballhausen, B., A. Kriegeskorte, S. Van Alen, P. Jung, R. Kock, G. Peters, M. Bischoff, K. Becker.** 2017. The pathogenicity and host adaptation of livestock-associated MRSA CC398. *Vet Microbiol* **200**: 39–45. <https://doi.org/10.1016/j.vetmic.2016.05.006>
- Bartsch, C., K. Szabo, M. Dinh-Thanh, C. Schrader, E. Trojnar, R. Johnne.** 2016. Comparison and optimization of detection methods for noroviruses in frozen strawberries containing different amounts of RT-PCR inhibitors. *Food Microbiol* **60**: 124–130. <https://doi.org/10.1016/j.fm.2016.07.005>
- Bartsch, N., J. Heidler, B. Vieth, C. Hutzler, A. Luch.** 2016. Skin permeation of polycyclic aromatic hydrocarbons: A solvent-based *in vitro* approach to assess dermal exposures against benzo[a]pyrene and dibenzopyrenes. *J Occup Environ Hyg* **13**: 12, 969–979. <https://doi.org/10.1080/15459624.2016.1200724>
- Becker, K., O. Denis, S. Roisin, A. Mellmann, E. A. Idelevich, D. Knaack, S. Van Alen, A. Kriegeskorte, R. Kock, F. Schaumburg, G. Peters, B. Ballhausen.** 2016. Detection of mecA- and mecC-Positive Methicillin-Resistant *Staphylococcus aureus* (MRSA) Isolates by the New Xpert MRSA Gen 3 PCR Assay. *J Clin Microbiol* **54**: 1, 180–184. <https://doi.org/10.1128/JCM.02081-15>
- Bendadani, C., L. Steinhäuser, K. Albert, H. Glatt, B. H. Monien.** 2016. Metabolism and excretion of 1-hydroxymethylpyrene, the proximate metabolite of the carcinogen 1-methylpyrene, in rats. *Toxicology* **366–367**: 43–52. <https://doi.org/10.1016/j.tox.2016.08.006>
- Bert, B., J. Chmielewska, S. Bergmann, M. Busch, W. Driever, K. Finger-Baier, J. Hößler, A. Köhler, N. Leich, T. Misgeld, T. Nöldner, A. Reiher, M. Schartl, A. Seebach-Sproedt, T. Thumberger, G. Schönfelder, B. Grune.** 2016. Considerations for a European animal welfare standard to evaluate adverse phenotypes in teleost fish. *EMBO J* **35**: 11, 1151–1154. <https://doi.org/10.15252/emboj.201694448>
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### B

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**Braeuning, A., H. Broll, A. Lampen.** 2016. Wirkungsbezogene Analytik: Neue Konzepte für die Überwachung und Lebensmittelsicherheit. *J Verbr Lebensm* **11**: 1, 91–96. <https://doi.org/10.1007/s00003-015-0979-z>

**Braeuning, A., A. Gavrilov, M. Geissler, C. Wenz, S. Colnot, M. F. Templin, U. Metzger, M. Römer, A. Zell, M. Schwarz.** 2016. Tumor promotion and inhibition by phenobarbital in livers of conditional Apc-deficient mice. *Arch Toxicol* **90**: 6, 1481–1494. <https://doi.org/10.1007/s00204-016-1667-1>

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**Brettschneider, A. K., C. Weikert, K. Abraham.** 2016. Stillmonitoring in Deutschland – Welchen Beitrag können die KIGGS-Daten leisten? *J Health Monit* **1**: 2, 16–25. <https://doi.org/10.17886/RKI-GBE-2016-038>

**Breves, G., M. Lahrssen-Wiederholt, H. Schafft, M. Spolders, U. Meyer, S. Dänicke, D. Von Soosten.** 2016. Balance studies on dietary intake and excretion pathway of glyphosate in lactating dairy cows. *Proc Soc Nutr Physiol* **25**: 51–52.

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**Browne, A., L. Dendler, Z. Di, D. Zhang.** 2016. The rise of Chinese consumer society: Emerging challenges and opportunities for sustainable consumption and production. *Discover Society* **28**.

**Budnik, L. T., X. Baur, V. Harth, A. Hahn.** 2016. Alternative drugs go global: possible lead and/or mercury intoxication from imported natural health products and a need for scientifically evaluated poisoning monitoring from environmental exposures. *J Occup Med Toxicol* **11**: 49. <https://doi.org/10.1186/s12995-016-0139-0>

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**Burow, E., A. Käsbohrer.** 2016. Risk Factors for Antimicrobial Resistance in *Escherichia coli* in Pigs Receiving Oral Antimicrobial Treatment: A Systematic Review. *Microb Drug Resist* **23**: 2, 194–205. <https://doi.org/10.1089/mdr.2015.0318>

## C

**Campe, A., D. Abernethy, F. Menzies, M. Greiner.** 2016. Latent class regression models for simultaneously estimating test accuracy, true prevalence and risk factors for *Brucella abortus*. *Epidemiol Infect* **144**: 9, 1845–1856. <https://doi.org/10.1017/S0950268816000157>

**Chatzisarantis, N. L. D., Q. Bing, C. Xin, M. Kawabata, S. Koch, R. Rooney, M. S. Hagger.** 2016. Comparing effectiveness of additive, interactive and quadratic models in detecting combined effects of achievement goals on academic attainment. *Learn Individ Differ* **50**: 203–209. <https://doi.org/10.1016/j.lindif.2016.08.015>

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## D

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## E

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## F

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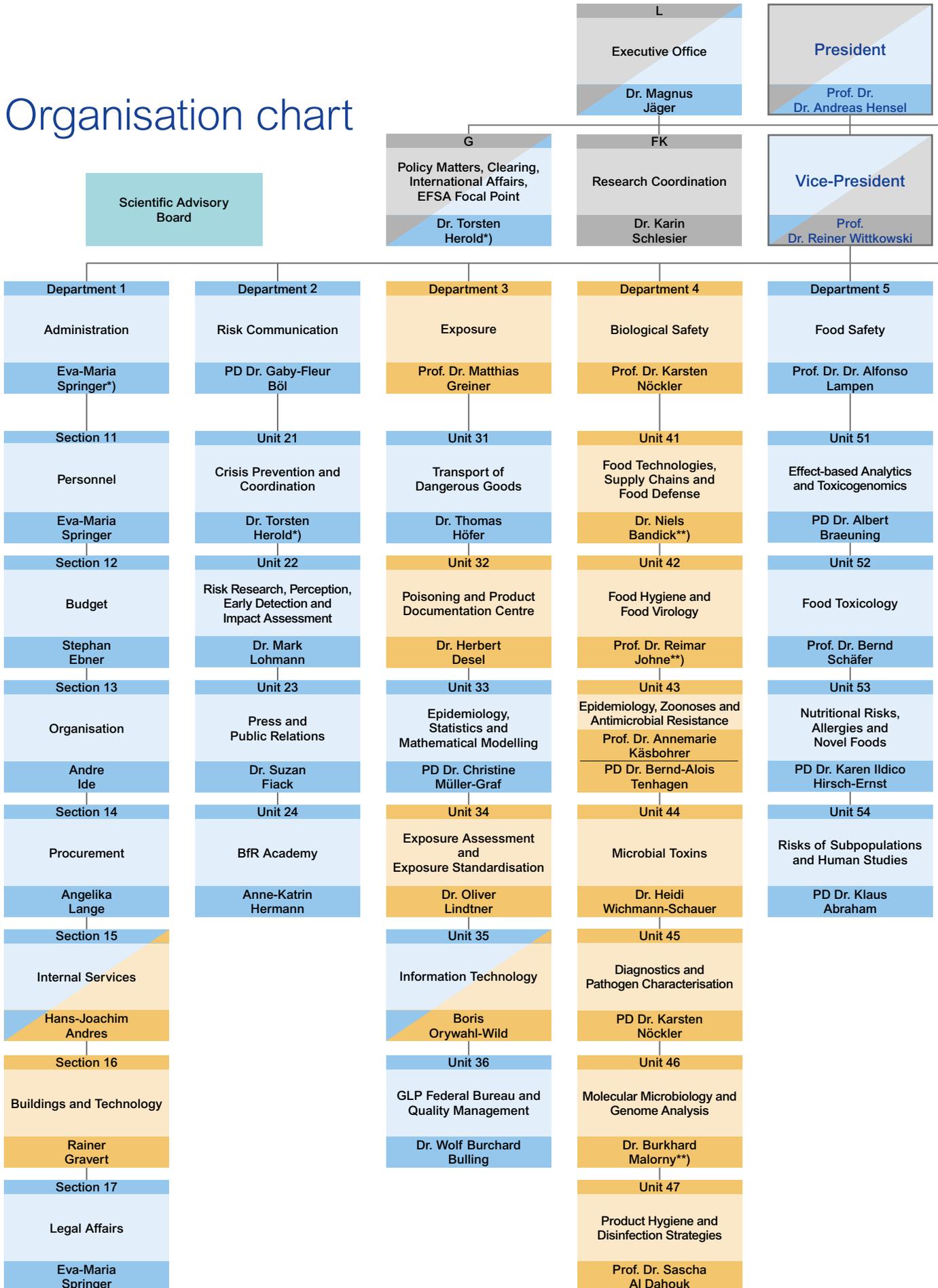
## Z

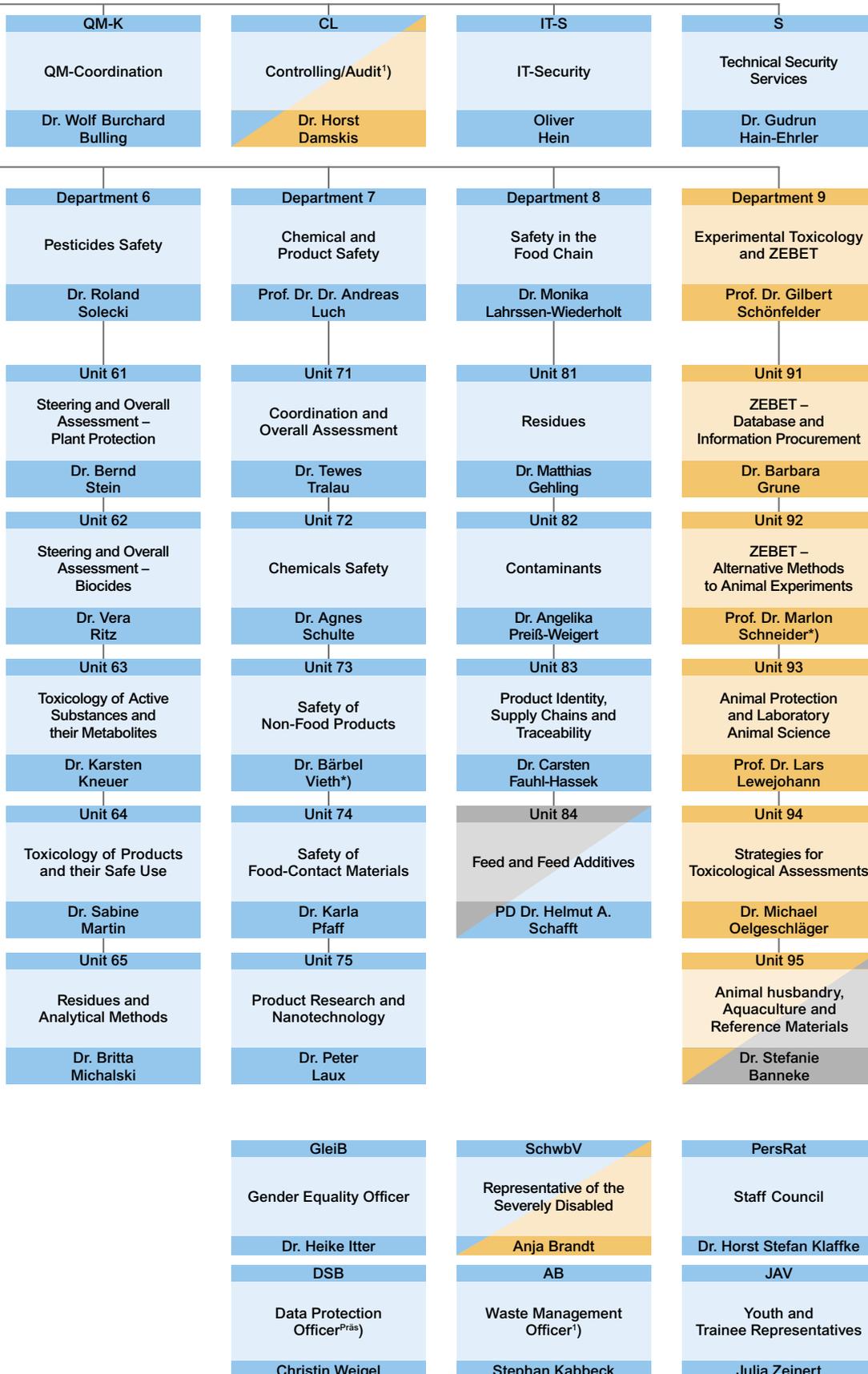
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\*) Temporary appointment/  
entrusted with the  
performance of tasks

\*\*) Represents the Head  
of Unit in all matters as  
necessary

) Reporting

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