International Center for Food Chain and Network Research

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Since its foundation as a cross-faculty network in 2006, the ‘Bonn International Center for Food Chain and Network Research’ (FoodNetCenter Bonn) has activated considerable external funds for the University of Bonn primarily provided through the EU Framework Programmes for Research and Development and through national programmes of e.g. BMBF and BMEL. The funds were used to support young scientists and young scientist teams providing them with the chance for international cooperations and to gain experience with global working groups in their field of research.

After 10 years the FoodNetCenter presents an excellent platform to worldwide networking with international research and higher education groups. Nowadays food chain research at the University of Bonn and its research center has established a recognized and central position in international quality and risk management research. The structure of the FoodNetCenter builds the framework of three inter-disciplinary focus groups: One Health, Food Waste and Responsible System Innovation.

Between 2006 and 2016 the FNC members participated in 57 public funded projects with more than 600 partners; eight projects have been or are coordinated by FNC members. 104 graduations and more than 400 master theses were financed by means of third-party funds on a scale of 17 million Euro.

During the last years seven young scientist groups used the interdisciplinary structure of the FNC to build up new working groups. Nearly 2,000 persons participated in the FNC events like the International European Forum on System Dynamics and Innovation in Food Networks (Igls Forum), the Cold Chain Management conferences and the IRIS-Workshops in Bonn.

Globalization and changes in consumer habits have triggered growing consumer demand for a wider variety of foods, resulting in an increasing complexity and longer global food chains. Ensuring that EU citizens consume safe and nutritious foods produced from healthy plants and animals is a key public health and economic priority.

In response, the International Center for Food Chain and Network Research together with other local networks have created a joint research agenda covering the whole food chain and supporting EU member states’s efforts to contribute to a high level of food and human safety. Addressing food and human safety by the One Health Concept, interdisciplinary collaboration can be considered as an important step in this direction.

The year 2016 was characterized by the fact that the long-standing international cooperation of the FNC members with universities in Europe and worldwide were increasingly recognized and used in the region. On the one hand, the representative speaker of the center was asked to take an active part in shaping the internationalization strategy of the University Bonn. On the other hand, the FNC is currently working as an experienced door opener for international research cooperation for the economy in the region of Bonn/Rhein-Sieg-Ahrweiler.

On the February 17th, 2017, the project proposals for the BMBF Internationalization of Leading-Edge Clusters, Future Projects and Networks will be presented to the International Advisory Board for the first time. On March 9th, 2017, the Cluster Initiative STEPs will be presented publicly as the first important item of the agenda of the 20th Jour Fixe of the Bonn.realis association.

Positive effects have already become apparent in the application phase: Research partners look for and find each other, cooperation agreements are made, and a dynamic atmosphere develops.

Moreover, the competition contributes to the formation of profiles and focal points in the cluster region which will still remain in place after the competition has ended.

Bonn, April 2017
The FoodNetCenter:
Mission and Vision

Still six sustainable development goals designed by the UN are a challenge for our research and research cooperation in the 16 working groups of the International FoodNetCenter. To meet the diverse challenges that confront chains and networks the classical single focused research approach is no longer adequate. A multi-disciplinary approach, encompassing side by side economical, social and legal disciplines as well as technological, environmental and natural sciences is required. The Bonn International Center for Food Chain and Network Research (FoodNetCenter Bonn) provides with both research and educational programs, and a close cooperation with businesses a multi-disciplinary platform to investigate challenges in the areas of e.g. food safety, food security, food affordability, new technologies, market access, global logistics, dependencies and cooperation between multinationals and small-scale producers, private and public standards and sustainability.

Citizens of the European Union enjoy one of the highest standards of food safety in the world, yet WHO estimates that every year in the European region 23 million people fall ill due to foodborne diseases, resulting in an increased burden on public health and significant economic implications. Balancing the needs of agri-food industry, whilst simultaneously ensuring consumer protection and encouraging sustainability, is a primary challenge in the contemporary European political climate.

The mission of the International FoodNetCenter is to promote chain and network research and to become an internationally acknowledged center of excellence, by establishing a world-wide infrastructure for exchanging, developing and disseminating knowledge and by supporting a public private project development in the field of food chains and networks as well as food and human safety.

To achieve its mission, the FNC will:
- promote multi-disciplinary chain and network research as well as one health approaches – nationally and internationally,
- enhance the international position and role of Bonn University in this research areas and play a key role in strategy formulation and the setting of research agendas,
- strengthen the existing scientific community at Bonn University in the area of the research fields and add value to ongoing research and education by enabling scientists to work with colleagues from other groups and disciplines,
- facilitate and support public private partnerships and projects and provide a research communication platform for national and international businesses, organizations, and public institutions.

During the last years the FoodNetCenter Bonn focused on the following activities:
- Engagement in jointly organized inter-disciplinary and international research in the area of ‘Food Chain and Network Research’ with a prime focus on system organization, system dynamics, and system innovation in complex interconnected value chain relationships with specific reference to quality, information and risk management.
- Preparation and coordination of European and international research networks directly through the Center or through members of the Center.
- Support of a global dialogue with similarly focused research networks through international conferences and workshops.
- Qualification of young scientists in the research domain
- Establishment of an international scientific journal and living books in the Focus Groups ‘Food Waste’ and ‘One Health’.
The Center understands its international research orientation as an integral part of the university’s orientation as an international research university. With its present and prospective inter-disciplinary research projects it supports the profile of the university and with its cooperative approach the university’s and the state’s agreement on research goals.

The International FoodNetCenter Bonn has been very successful in the past in activating external funds for the University of Bonn, supporting young scientists in obtaining a PhD and getting involved in international cooperations as well as providing the possibility for students to receive the certificate ‘DGQ Quality Systems Manager Junior’. A particular strength of the FNC while establishing and consolidating regional and especially European and global research networks has been the close collaboration with the international public private partnership organization ‘GIQS e.V.’ in Bonn. The FNC and GIQS are founding members of the regional network Bonn.realis e.V. (Bonn Research Alliance of Innovative Information Systems in International Quality Food Chain and Crisis Communication). Together with the European Qualification Alliance (EQAsce) a FNC-team developed new qualification offers. A key objective of the training philosophy is the long-term capacity building of the participants in the sense of lifelong learning.

Vision

All three sides of the ‘Knowledge Triangle’, i.e. higher education, research and innovation, are integrated in the FNC concept according to the Global Goals and the EU food safety policy.

In order to minimize the risks to public health and to the wider economic system, the European Union has put in place several legislative tools aimed at enhancing food safety. With a budget of €1.9 million between 2014 and 2020, the first comprehensive Financial Framework Regulation for the Food Chain provides finance for controls, measures to improve animal and plant health and scientific research, as well as awareness-raising and information programmes. Another main goal of EU food safety policy is to ensure sustainability of the food system. To this end, in 2015 the Commission has included the reduction of food waste in its Circular Economy Package, and established a new EU Platform on food losses and food waste to define measures to be adopted.

Besides governance, innovation drives development, but also new technological food contact materials and new smart agricultural techniques. The introduction of digital technologies within agri-food chain is of great promise, but sector-wide inclusion is yet to occur. The FNC will be one of the organizers of the first One Health and Food Safety Congress 2018 in Bonn. The Congress will provide an invaluable opportunity for experts, policy makers, NGOs and other key stakeholders to discuss the latest One Health initiatives surrounding food safety, human health, consumer protection and innovation, in order to foster a resilient and sustainable agri-food chain. The Congress will also allow delegates to assess the current and future challenges facing the global food and health system, and to share best practice from across the world.

FNC-Management Board and Council share a commitment with project partners from industry and organisations located in the region to develop the European research area by all means available within the EC-Horizon 2020 Programs, trans-national and trans-regional funding and financial support by DFG, BMEL and BMBF on prioritized topics. FNC as cooperation partner and stakeholder shares the vision of a joint Regional Innovation Center (RIC). Such a knowledge-related forum is dedicated to increasing innovative and entrepreneurial activities in Europe by creating a collaborative ecosystem and pipelines that mobilize the resources, inter-state research programs and educational opportunities necessary to develop, attract and retain talents in the region of Bonn.
Organization of the FoodNetCenter

The central organ of the FoodNetCenter is the center council. The Management Board consists of three persons elected by the center council for three years in the year 2012.

2.1 Management Board

The tasks of the Management Board are:

- Development and coordination of the scientific program
- Work out of budget proposals and financial plan-nings
- Creation of statements on accounts and final re-ports
- Representation of the FoodNetCenter towards the university management as well as external inves-tors
- Engagement in public relations work
- Preparation and execution of scientific events
- Enhancement of the communication between the members of the FoodNetCenter
- Creating genuine added value for the region and high international visibility of FNC by supporting the establishment of a leading edge cluster

Management Board Members:

- Prof. Dr. Brigitte Petersen
  Chair of the Management Board.
  She chairs the division of Preventive Health Management in the Institute of Animal Science.
  Representing the Agricultural Faculty and FNC in project team of the University preparing HRK au-dit of the internationalisation strategy

- Prof. Dr. Monika Hartmann,
  Vice Chair of the Management Board.
  She chairs the division ‘Market Research of Ag-riculture and the Food Economy’ within the De-partment of Food and Resource Economics since 2002.

- Prof. Dr. Gabriele Bierbaum,
  Member of the Management Board
  Since 2004 she has an apl. Professorship in Microbiology.
Organization of the FoodNetCenter

2.1

Figure 2: Structure and Organization of the International FoodNetCenter

FNC Office

The secretariat of the chair supports and finances the work of the Management Board.

Petra Heinrich
- Coordination and allocation of tasks
- Appointment and event management
- Administrative management of community projects
- Website
- Communication between the Management Boards of FNC, Bonn.re•al•is, GIQS and bio innovation park Rheinland

Dr. Yvonne Ilg
- Coordination for common projects between FNC and the associated partner EQAsce
- Support of Junior Research Groups
- Communication with project coordinators and project partners
- Communication between FNC and the joint initiative STEPs

Dr. Susanne Lehnert
- Coordination of the university network in the area of Higher Education
- Establishment of an Open Education Platform
- Support of the ‘DGQ Quality Systems Manager Junior’ education
- Communication between FNC and other networks like EQAsce and Bonn.re•al•is
- Coordinating the technology platform SMART Pork
2.2 International Advisory Board

The International Advisory Board advises the FNC in general scientific, organizational and technical issues. The board also defines the general strategy and standards of the FNC. In addition, it facilitates contacts and cooperation between the FNC and other research networks in Germany and abroad.

The Advisory Board members are:

Dr. Hanns-Christoph Eiden
President of the Federal office for Agriculture and Food

Prof. Dr. Alexander Friedrich
Professor of Medical Microbiology at the University of Groningen and the UMCG, head the Medical Microbiology department.

Dr. Dr. h.c. Christian Petermann
Former Director for Environment Research at the Directorate-General of the European Commission Brussels

Prof. Dr. Ellen Goddard
Cooperative Chair in Agricultural Marketing and Business at the Department of Resource Economics and Environmental Sociology, University of Alberta (Canada).

Prof. (em) Dr. Armin B. Cremers
Former Dean of the Faculty of Mathematics and Natural Sciences from 2004-2008 and Vice-Rector for Planning and Finance at the University of Bonn
2.3 Members of the FoodNetCenter

Since FNC’s very beginning, a couple of new faces have joined the network and contributed to the diversity that makes the FNC community so enriching and unique (see figure). Between 2011 and 2017 the number of FNC members increased up to 18 groups of nine institutes of three faculties. Nine of these groups are led by women. With the participation in the FNC-Council the members are committed to initiate efforts and activities enhancing international and inter-disciplinary research and innovation.

The structure of FNC will continuously change over the next years. In the past young colleagues have already left the center to change to another university or research institute. Some colleagues are retired or are close to it. Others have built up their own networks and are therefore no longer involved within the three focus groups of the Center. Therefore the question of the future will be how the FNC will look like in the next five years.

Figure 3: Members of the International FoodNetCenter
2. Organization of the FoodNetCenter

2.4 Associate Members

The FNC cooperates with various groups and scientists from outside the University of Bonn. Of specific relevance are the associated members, GIQS e.V., CentMaResearch and EQA sce:

GIQS e.V. (Trans Border Integrated Quality Assurance) is one of the first public private partnership organizations for innovation and cooperation in sector oriented quality management in north-west Europe. It was established as a research and development platform in 2001 during one of the most crucial crisis situations in the European agricultural and food sector. Founding members were the universities of Bonn and Wageningen together with industry groups, the chambers of agriculture, various associations, and provinces of the border region between Germany and the Netherlands, one of the European ‘Euregio’ regions. Enterprises are supported in the integration into international research and development projects as well as in the identification of suitable research partners in case of need. Dr. Martin Hamer is head of the management board and Prof. Dr. Brigitte Petersen is founding member of GIQS and member of the supervisory board.

GIQS as tax-exempt organization with stakeholders from research, industry, and administration sees its primary responsibility in the support of cooperative research and development, project management and knowledge transfer. GIQS was awarded in 2002 the state of NRW’s cooperation award ‘Science to Business’. Since 2008, GIQS is member of the initiative ‘Competence Networks Germany’, an initiative of the Federal Ministry for Economy and Technology to encourage the most innovative and strongest national competence networks with technological orientation. GIQS has expressed its interest in striving for cluster excellence and is awarded with the European Cluster Management Excellence label in BRONZE.

Uninterrupted quality management from farm to fork is a precondition for safe and healthy food. However, it requires a product based knowledge and information exchange between enterprises throughout the chain. GIQS supports enterprises in production and services along the whole production chain in the planning and facilitation of enterprise cooperation systems for improving transparency for all stakeholders as well as for consumers.

Cooperation between private and public organizations from science, industry, and administration eliminate barriers between enterprises, stages of the production chains or countries in pursuing research and development projects.

Partner support is channeled through four service packages offered by GIQS:

- Acquisition of support funds from e.g. Interreg programs of the EU, research programs of the EU, research programs of Federal Ministries.
- Initiation of research cooperation between science, industry, and administration
- Knowledge transfer through publications, workshops, and websites

With these services GIQS complements excellently the research activities within the FNC. Especially the acquisition of large EU funding would not have been possible without the close collaboration. Since its foundation. Close collaboration with the private sector via GIQS serves as an essential tool for technology transfer and the practice oriented implementation of the theoretical findings, thus contributing to increasing the societal and economic value of academic research.

Since 2016, the coordinator of the focus group Food Waste Dr. PD Kreyenschmidt is also on the management board of GIQS. GIQS is one of the founders of EQAsce. This educational cooperative ensures the expansion of the service sector Education and long-life-learning offers for QM-responsibles in agri-food chains.
CentMa is a tax-exempt research organization with a focus on strategic management and communication developments for broad-based management support and serves the scientific and management community since 25 years.

CentMa’s management workshop initiatives date back to first courses that were established in 1982 by Prof. Carl Gotsch of the Food Research Institute at Stanford University in the US. The groups included high level international project managers and international executive government officials who were interested in utilizing the most modern concepts in management and the use of the emerging computer technology in project management improvements. Shortly after, Prof. Gotsch (Stanford) and Prof. Schiefer (Kiel) decided to move the concept to Europe and establish the ‘International Kiel-Stanford Workshops’ for international management support that were jointly held by Prof. Gotsch and Prof. Schiefer in Kiel, Germany, and with support of the University of Kiel. The workshops proved to be highly successful attracting not only leading project managers from all over the world but also high level officials up to members of governments. The background of participants involved enterprise management as well as regional, national and international project management activities.

Subsequently the workshops developed advanced management programs integrating new technologies with advanced discussions of the emerging concepts in quality and strategy management in enterprises and value chains aimed at experienced management personnel. In later years, the activities incorporated the organization of international conferences and journals with a focus on an interchange between science and management groups working in the field. In cooperation with the associate member CentMa as publisher, the Center established the international scientific journal ‘International Journal on Food System Dynamics (IJFSD) (www.centmapress.org)

A further field of activity involves European training initiatives and European inter-disciplinary research projects.

To better serve the emerging international activities, the initiatives were incorporated into a non-profit, tax exempt research and training enterprise (ICID) which, in 1990, moved its activities to the city of Bonn and was later renamed into CentMa Research.

CentMa is engaged in applied research with involvement of industry and especially SMEs, by supporting exchange through scientific conferences, stakeholder workshops, and the development of international networks, by transferring research results through training workshops, expert advice and system development support, by publication of international journals and training materials, and by international research project activity.

The European Qualification Alliance was founded in 2015 by standard setters, certification organizations, public and private educational institutions and service providers specialized on agricultural and nutrition science.

In all European public and private institutions the need for coordinated training programmes in the field of “Food Chain”, “Food Safety” and “Risk and Crisis Management” is constantly increasing. The EQA education and training is clearly tailored to the specific needs of the agrifood-personnel.

The aim of the modular course series is the long-term competence development of all participants according to a live-long learning concept.

With the initiative SMART Pork, started in January 2016, EQAsce aims to support research and development activities, which facilitate innovative IKT-based services and support European technology providers with global market development. Along with user groups initially from meat industry and European research facilities prototypical industry solutions will be developed.
3. Focus Groups

FNC Focus Groups are the basic units of the organizational structure of the network. They are fully integrated in the University of Bonn and provide the social environment where young scientists, senior advisors, students and collaborators meet or share the development of their topic, organize activities and give mutual support. Ideally, these teams are also diverse in terms of disciplines and gender. Within the last three years, the FNC established three Focus Groups in the thematically fields One Health, Food Waste and Responsible System Innovation.

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To achieve this mission, the FNC has defined six main activities:

- Promotion of multi-disciplinary chain and network research
- Enhancement of international position of the center by formulation of strategic research agendas for Food Safety and Human Health
- Facilitation and support of public-private-partnerships in Food Chains and network research projects
- Engagement in jointly-organized inter-disciplinary and international research in the area of ‘Food Chain and Network Research’
- Qualification of young scientists in the research domains Food Safety and Health and Crisis Management
- Support of a global dialogue with similarly focused research networks through international conferences and workshops

3.1 Focus Group: One Health

Interdisciplinary team:

- Prof. Dr. Brigitte Petersen, Preventive Health Management (coordinator)
- Dr. Julia Steinhoff-Wagner, Preventive Health Management
- Dr. Yonne Ilg, Preventive Health Management
- Dr. med Dipl. Ing. agr. Ricarda Schmithausen, Clinical Microbiology
- Prof. Dr. Gabriele Bierbaum, Microbiology
- Prof. Dr. Dr. h.c. Martin Exner, Public Health
- Dr. Martin Hamer, Environmental Health
- Dr. Susanne Lehnert, Public Private Partnership Management

Antimicrobial resistance (AMR) is a global public health concern. An increasing global food trade, cross border trade of livestock animals and travel of tourists favors the spread of resistant bacteria between countries and continents. Coordinated efforts across borders are needed to develop a “One Health” concept. The One Health concept is a worldwide strategy for expanding inter-disciplinary collaborations and communications in all aspects of health care for humans, animals and the environment.

The aim of the Focus Group is to study the role of the total food chain as a reservoir and disseminator of drug resistant bacteria, focussing on food, animals, plants, humans and their environment.

To develop a One Health strategy, three joined research fields are defined:

1. Assessment of microbial population and drug resistance in bacteria
2. Support of food chain oriented crisis management
3. Evaluation of the One Health approach
Focus Groups

Members of the FNC-Focus Group One Health are involved in the Fortschrittskolleg “One Health and Urban Transformation”. In the next years a transdisciplinary Graduate School will be established by the regional partners: University of Bonn, the University of Applied Science Bonn-Rhein-Sieg and the United Nations University - Institute for Environment and Human Security (UNU-EHS) hosted by the center for Development Research (ZEF).

The Fortschrittskolleg was launched in July 2016 and will investigate the various dimensions and transformations of the urban systems and their impact on human, animal and environmental health. The historical development and current challenges of North Rhine-Westphalia with a particular focus on the Ruhr Valley, will be contrasted with the three urban metropolitan areas: São Paulo (Brazil), Accra (Ghana) and Ahmedabad (India).

3.2 Focus Group: Food Waste

Interdisciplinary team:
- PD Dr. Judith Kreyenschmidt, (Cold Chain Management Group, coordinator)
- Dr. Ulrike Herbert, Postdoc Cold Chain Management Group
- Dr. Sophia Dohlen, Institute of Nutrition and Food Sciences
- Prof. Dr. Rainer Stamminger, Institute of Agriculture Engineering (ILT)
- Dr. Jasmin Geppert, Postdoc, Household and Appliance Technology Section
- Prof. Dr. Michaela Schmitz, INRES-HorticulturalScience/Hochschule Bonn-Rhein-Sieg

Food waste is one of the most publically discussed topics in the recent years. Around the world, every third food product destined for human consumption is discarded, corresponding to more than 1.3 billion tons of food per year. Wasting food means that not only the products themselves are lost, but also large amounts of resources such as raw materials, energy, land use and packaging materials. To move towards a near-zero waste society innovative, sustainable and value added cross-sector approaches are needed to prevent food waste and limiting environmental impacts. The interdisciplinary working Group “Food Waste” is exactly addressing these topics.

Both “One Health” concepts of FNC and Fortschrittskolleg adopt an integrative perspective of health, recognizing the intrinsic interconnections between human, animal and environmental health. Consequently the environmental, social and economic systems interact with and shape One Health, investigating these interactions that maximize synergetic effects and minimize trade-offs and mitigate health risks.

The position of the region Bonn as “One Health” Hub will be enlarged as location for the GISKOHN (German Initiative Sharing Knowledge of “One Health” Networks) secretary in future.

1. Development and investigation of innovative technologies and approaches to improve food quality, safety and shelf life resulting in a food waste reduction
2. Development of technologies for resource efficient food production and storage
3. Investigation of consumer behavior in the field of food waste considering socio-economic and cultural aspects
4. Producing safe and healthy food products using renewable resources on an industrial scale
3.3 Focus Group: Responsible System Innovation

Interdisciplinary team:
- Prof. Dr. Monika Hartmann, Agricultural and Food Market Research (coordinator)
- Prof. Dr. Stefanie Bröring, Technology and Innovation Management in Agribusiness
- Prof. Dr. Georg Noga, Institute of Crop Science and Resource Conservation
- Prof. Dr. Gerhard Schiefer, Food Chain Management
- Dr. Johannes Simons, Agricultural and Food Market Research

Responsible system innovation is a transparent, interactive process that takes into consideration the acceptability and desirability of the innovation process as well as its outcome by all relevant stakeholders. It leads to systemic changes at the technical, organizational and the socio-cultural level and is a prequisite for a dynamic and competitive agricultural and food sector. Responsible system innovation in the food production chain needs to consider the close interdependencies between actors and their dependencies on their cooperation.

The group consists of members from animal and plant science, food chain management, technology and innovation management and consumer and market economics.

Climate change with rising temperatures, rising sea level and increased greenhouse gases will be reflected by water, feed and housing conditions and affect animal health and welfare. Because of complex interactions between animal welfare, economic aspects and sustainability as well as mainly long term effects on the production chain as a whole, responsible system innovations often fail to get priority at the company internal level.

Therefore scientific community needs to make especially overall effects for the food production chain and its members visible. This requires data collection with smart solutions and the analysis of big data.

Research activities cover the development, optimization and provision of new technologies and processes with the aim to support the performance and competitive capability of the agricultural and food sector. The role of transparency and trust in regard to sustainable agri-food chains is another big area of research in this group.
In the field of innovation and regional development, the role of FNC as a higher education institution is to act as a strategic organization bringing together all its developed know-how to create wider economic and social impact. Thus, a holistic view of the FNC’s joint activities enables more possibilities, rather than an isolated view. Integrating the fields of research, teaching and external engagement, the knowledge created within FNC may have a much greater impact. The FNC Management Board as well as the FNC academic personnel act pro-active and move far beyond mono-disciplinary and mono-functional approaches.

Funding structures have changed in the past towards more competition. Therefore more engagement in proposal writing is necessary while at the same time targeted funding is more limited. Nowadays the multifaceted roles of a local network like FNC is recognized in regional capacity building in the areas of research, education and business innovation. Due to the international networking activities of FNC chairwoman, Brigitte Petersen, and her board membership within GIQS and Bonn.realis, FNC acts as bridgehead in the advancement of regional and cross-border cooperation. At the same time the head of the FNC is involved in the boards of GIQS and Bonn.realis. The FNC Management Board also initiated the recently the foundation of the European Qualification Alliance (EQA) which aims at providing internationally recognized education and training in the area of quality, risk and crisis management. The three networks FNC, GIQS and Bonn.realis together provide an adequate and effective cluster infrastructure in the area of Food and Human Safety. It leads to concentrated financial and organisational resources to achieve a powerful and serious position in this sector and to an accelerated transfer of knowledge and know-how from research to business.

A joint approach of the FNC members to foster innovation, cooperation and internationalization is to perform bridging functions on four levels:

Education networks, system innovation, joint research activities and bridging between FNC Focus Groups

**Bridging to Education Activities**

Dr. Julia Steinhoff-Wagner fulfills a multifaceted role. She has a bridging function between the Focus Groups Food Waste and One Health. Furthermore she is engaged in the Global Health Master of the University of Bonn together with UNU and ZEF and serves as a concact person between FNC and the cluster project Smart Pork.

Dr. Susanne Lehnert is coordinating the FNC’s university network in the area of Higher Education. She is in charge of the organization and coordination of the master program “DGQ Systems Manager Junior”. She is bridgehead to ALFONS alliance where four universities match their teaching programs with new professional fields in the agri-food area. She is the FNC’s link to the Polish Agri Innovation Cluster coordinated by Warsaw University of Life Science. Since June 2015 she is member of the Board of Directors of EQA.

Dr. Ulrike Herbert is the contact person for matching the moduls of the FNC’s quality system Manager Junior program and other joint Master programs in the University of Bonn. She is involved in the working group 4 (Dialogue with public and private stakeholders) for the NEOH consortium.

**Bridging to Focus Groups**

PD Dr. Judith Kreyenschmidt bridges the interdisciplinary collaboration between the FNC focus groups by providing theoretical and methodological approaches for system modeling. These scientific instruments can be used by all FNC focus groups. The modeling of biological and biologic-technological systems allows to derive prediction- and risk assessment tool. Mrs Kreyenschmidt has also a bridging function between several external networks (e.g. the German network “essenswert”, the cold chain management network).
Bridging & Networking Functions

3.4 Bridging to System Innovation

Prof. Dr. Stefanie Bröring has a bridging function to the BioEconomy Science Center BioSC. She is engaged in the FNC-GIQS-NRW-Business Innovation Program.

Dr. Martin Hamer has a bridging function between like German Food Clusters and the GIQS Offices in Kleve, Wageningen and Warsaw. He is engaged in the FNC-GIQS-NRW-Business Innovation Program.

As elected chairman of the Bio Innovation park Rheinland Prof. Dr. Gerhard Schiefer fulfills a bridging function between research and business innovation.

As one of the initiators of the bio innovation park Rheinland Prof. Dr. Ralf Pude has a leading function concerning the FNC’s business innovation activities.

Prof. Dr. Stefanie Bröring has a bridging function to the BioEconomy Science Center BioSC. She is engaged in the FNC-GIQS-NRW-Business Innovation Program.

Dr. med. Dr. agr. Ricarda Schmithausen has a bridging function between external networks and projects especially at the interface between Agriculture and Medicine. She is co-coordinator of the BMBF-Project ‘HyRekA’ and active member of the management board of NEOH. Furthermore she is involved in the Global Health Master of the University of Bonn together with UNU and ZEF.

Prof. Dr. med. Dr. h.c. Martin Exner is initiator of the BMBF project ‘HyRekA’, the largest networking project ever funded by the BMBF. In this regard he has the bridging function for the FNC. He is involved in the Global Health Master of the University of Bonn together with UNU and ZEF.

Dr. Hannah Jaenicke is the coordinator of the Horticulture Competence Centre (KoGa). In this function she provides a bridge to and between horticultural and nutrition-related research, experimentation, education and extension activities.

Prof. Dr. Michaela Schmitz bridges the interdisciplinary collaboration between the FNC focus groups concerning the analysis of plant products, especially type and variety of secondary compounds. The possibility of quality analysis can be used by all other FNC focus groups. Mrs. Schmitz has also a bridging function between several external groups (e.g. Research groups at Bonn- Rhine- Sieg University of Applied Sciences, Bio Innovation Park, Expertenkommission BfArM, BVL).

Prof. Dr. Ute Nöthlings is coordinator of the BMBF DietBB competence cluster project. She has a bridging function between the scientific community in the field of nutrition and health and researchers in the cross-faculty centers. Existing local network structures like BAEN are jointly used for knowledge transfer and resource allocation.

Existing local network structures like BAEN are jointly used for knowledge transfer and resource allocation.

Prof. Dr. med. Dr. agr. Ricarda Schmithausen has a bridging function between external networks and projects especially at the interface between Agriculture and Medicine. She is co-coordinator of the BMBF-Project ‘HyRekA’ and active member of the management board of NEOH. Furthermore she is involved in the Global Health Master of the University of Bonn together with UNU and ZEF.

Prof. Dr. med. Dr. h.c. Martin Exner is initiator of the BMBF project ‘HyRekA’, the largest networking project ever funded by the BMBF. In this regard he has the bridging function for the FNC. He is involved in the Global Health Master of the University of Bonn together with UNU and ZEF.

Dr. Hannah Jaenicke is the coordinator of the Horticulture Competence Centre (KoGa). In this function she provides a bridge to and between horticultural and nutrition-related research, experimentation, education and extension activities.

Prof. Dr. Michaela Schmitz bridges the interdisciplinary collaboration between the FNC focus groups concerning the analysis of plant products, especially type and variety of secondary compounds. The possibility of quality analysis can be used by all other FNC focus groups. Mrs. Schmitz has also a bridging function between several external groups (e.g. Research groups at Bonn- Rhine- Sieg University of Applied Sciences, Bio Innovation Park, Expertenkommission BfArM, BVL).
The engagement of FNC members in national and international networks is of special importance to promote joint research in close cooperation with other universities and independent research institutions.

In addition, R&D networks in close collaboration with the private sector serve as an essential tool for technology transfer and practical-oriented implementation of theoretical findings, thus contributing to increasing the societal and economic value of academic research in the three focus groups: One Health, Food Waste and Responsible System Innovation. Most of the networks aim to identify the specific research demand of Germany and Europe. The intensive exchange between the different institutions as members of the networks leads to an optimal use of existing resources as well as synergy effects. All networks comprising general strategy platforms serve as a forum for the discussion of current scientific and agro-political challenges.

Europe’s food and nutrition businesses operate in a challenging and dynamic environment. Translating these challenges effectively into new business opportunities is required for sustaining its position in global competition. The International FoodNetCenter became involved with leading research and higher education institutions and regionally rooted project partners from industry with a global reach. Actually there are four national and two new international networks intensively linked to the FNC activities.

Networks coordinated in the Bonn Region:
4. Interdisciplinary Research

The integration of animal, plant and human health as well as environmental protection in a globalized world was considered by the International Advisory Board as a „pearl“ and „capital“ of the FNC. The board noted the high relevance of three research topics and a stronger integration of social science research in the Focus Groups. The members of the Focus groups tried to follow the recommendation in the last year.

4.1 Antibiotic Resistance

The core project of the group „Antibiotic Resistance“ is the HyReKA project. The project has started on 1st February 2016 and is now well under way. The groups of the FNC meet once a week and the first months were spent with preparatory work including several meetings, generation of a home-page and press-release, the definition of protocols, of parameters for the data base, sample points and the generation of sampling plans.

Further work was spent on the optimisation of sample processing, especially to adapt the agars and methods that are used for cultivation in medical microbiology to samples of waste water which contain environmental bacteria. First results show the presence of resistant bacteria in waste water from hospitals as well as from waste water from a rural area and very diverse antibiotic concentrations were measured in the waste water from the hospital.
## Interdisciplinary Research

### HyReKA

<table>
<thead>
<tr>
<th>Funding</th>
<th>Federal ministry of education and Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>01.02.2016 – 31.01.2019</td>
</tr>
<tr>
<td>Partners</td>
<td>International FoodNetCenter Bonn (Bierbaum, Exner, Petersen, Kreyenschmidt, Schmithausen, Steinhoff-Wagner and employees), RWTH Aachen, TU Dresden, Institute for technology Karsruhe, Erftverband Bergheim, Oldenburgisch-Ostfriesische Wasser-Verband, Xylem Water Solutions, Klärwerk Steinhäule, Federal office of environment</td>
</tr>
<tr>
<td>Aims</td>
<td>Tracking of antibiotic resistant pathogens from hospitals, agricultural facilities, slaughterhouses and airports via wastewater and sewage water treatment plants into surface waters and prevention of their dissemination.</td>
</tr>
<tr>
<td>Methods</td>
<td>Sampling of a large variety of waste and raw water, isolation of resistant bacteria, determination of antibiotic concentrations and resistance genes and characterization of bacteria, modeling of various systems.</td>
</tr>
</tbody>
</table>

### UBA-Project: Communication strategies for reduction of veterinary drug entries

<table>
<thead>
<tr>
<th>Funding</th>
<th>Federal office of environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>01.07.2016 – 31.08.2017</td>
</tr>
<tr>
<td>Partners</td>
<td>Egologic Institute non-profit GmbH, International FoodNetCenter Bonn (Petersen, Steinhoff-Wagner, Ilg), EQAsce, Landwirtschaftskammer NRW, Hydor Consult GmbH,</td>
</tr>
</tbody>
</table>
| Aims             | • Collection of scientific and recommendative informations for veterinarians and farmers about the environmental impact of usage of veterinary medicine  
                   • Measurement of the environmentally friendly usage of veterinary medicine  
                   • Production of information brochures, education and learning materials and an internet platform for various target groups |
| Methods          | Literature research, concept development and expert discussion |

### Foal health in regard to mare and environment

<table>
<thead>
<tr>
<th>Funding</th>
<th>Derby Spezialfutter GmbH, Society for the pro,otion of science around the horse (GWP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners</td>
<td>Derby Spezialfutter GmbH, International FoodNetCenter (Steinhoff-Wagner, Schmithausen)</td>
</tr>
<tr>
<td>Aims</td>
<td>The evidence of a relation between Ochratoxin A and resistant germs with regard to the same origin (mould fungus)</td>
</tr>
<tr>
<td>Methods</td>
<td>Testing feed, mare's milk and stable dust for mycotoxins; Taking nose and anal swap samples of mares, foals and stable environment to analyse microbial colonisation and resistences</td>
</tr>
</tbody>
</table>
4. Interdisciplinary Research

4.1 Postnatal Adaptation and Animal Health Management (Proposed)

**Funding:** For „Junior Research Group (VW Freigeist)“

**Period:** 2017 – 2022

**Partners:** International FoodNetCenter Bonn (Steinhoff-Wagner), ITW, NITRA Slowakia, USDA CNRC Houston, TX

**Aims:** The overall goal of the project is to develop One-Health conform recommendations for postnatal health management. This will be realized by achieving the following objectives:

2. Modelling of vertical transmission of antibiotics and resistances with waste milk.
3. Clarification of the role of bioactive compounds in colostrum and mature milk.
4. Identification and evaluation of colostrum feeding strategies across species.
5. Development of model-based recommendations and evaluation.

**Methods:** On the go interviews, survey, in vitro an in vivo experiments
Interdisciplinary Research

MiRA: Microbe induced Resistance to Agricultural pests (Proposed)

| Funding: | Kobenhavn's Universitet Denmark |
| Status: | Submitted |
| Partners: | Applied for International FoodNetCenter Bonn (Hartmann), 11 Academic institutions and 6 companies |
| Aims: | MiRA project will train 15 PhDs in basic and applied research on context-dependency of Microbe-induced Resistance (MiR), mechanisms, and impacts on plant performance and other biocontrol organisms. We will use this understanding to improve our ability to predict the effectiveness of MiR under different conditions, to select plant and microbial strains with improved context-stability, and to develop better methods for the formulation of microbial inoculants and their application in agriculture. Finally, we will analyze economic prospects and constraints for MiR development and use. |

SocialLab: Society's perception of animal husbandry (Proposed)

| Funding: | Federal Ministry of Food and Agriculture (BMEL) based on a decision of the Parliament of the Federal Republic of Germany via the Federal Office of Agriculture and Food (BLE) under the innovation support program |
| Period: | 05.2015 – 04.2018 |
| Partners: | Thünen-Institut für Marktanalyse, Fachhochschule Südwestfalen, Georg-August-Universität Göttingen, Technische Universität München, International FoodNetCenter Bonn (Hartmann), Heinrich-Heine-Universität, Instet-Privates Forschungs- und Beratungsinstitut für angewandte Ethik und Tierschutz, Zeppelin Universität |
| Aims: | Differentiated analysis of criticism of farm animal husbandry from various societal groups; Identifying realistic ways how farm animal husbandry can be improved from the perspective of different societal groups; Removal of barriers between e.g. consumer, citizen, farmers, retailer in dealing with each other |
| Methods: | Combination of qualitative (e.g. expert interviews, focus groups), quantitative (e.g. online surveys) and/or imagine methods (e.g. functional magnetic resonance imaging) |
It will be challenging to meet future global demands for food while avoiding, or at least mitigating, negative impacts on ecosystems – and at the same time reducing poverty, supporting livelihoods and ensuring food safety and animal welfare. At the same time, the research groups are confronted with changing consumer demands, the challenges of climate change and advancing globalisation as well as shortages of resources. Other assessments indicate that nowadays nearly half of our food is already lost before it reaches private households. The reasons for this lie, amongst others, in rotting and destruction by parasites already in the field, inefficient management of supply chains, weak points in the management of cold chains and inadequate local infrastructures.

The global challenge to produce more food and to ensure, at the same time, that this food is of high quality, in consideration of the principle of sustainability, therefore requires research approaches and management strategies guaranteeing an overall view and interconnection of all links and players of the feed and food chains in an international context. Therefore the interdisciplinary research group deals mainly with the Netchain as research objective. The interdisciplinary approach can contribute in this regard enormously to responsible and sustainable food production, processing and consumption.

The interdisciplinary teams are devoted to developing science based concepts for the creation and management of complex value added networks in the national and global agri-food industry. They also focus on optimizing the integration of the networks into the respective socio-cultural and socio-political environments.
### Smart Pork - Production-accompanying Organisation of Animal Welfare and Health Cooperations along the entire meat value chain

<table>
<thead>
<tr>
<th>Funding:</th>
<th>Meat-Sector-Technology Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period:</td>
<td>01.2016 – 12.2018</td>
</tr>
<tr>
<td>Partners:</td>
<td>International FoodNetCenter Bonn (Petersen), EQAsce, PigCHAMP Pro Europa, EITCO GmbH, CSB-System AG, ChainPoint GmbH, AgriSyst GmbH, EPG Assistant GmbH, Fleischprüfring Bayern e.V., Agrizert GmbH, Topigs Norsvin GmbH</td>
</tr>
</tbody>
</table>
| Aims:           | • Creation a roadmap to implement system innovations  
                  • Creation of synergy effects between simultaneous development projects within different pilot value chains.  
                  • Neutral assessment of cost and benefit of technical solutions to improve the animal welfare performances of all responsible persons in the entire value chain.  
                  • Improvement and acceleration of the common knowledge building.  
                  • Improvement of the cooperation between universities and companies. |
| Methods:        | The merger of companies and research institutes according to the four industry challenges. Regular workshops of the platform. |
4.2 Interdisciplinary Research

Animal Welfare in agricultural livestock farming in Germany -
Changes and trends in consideration of actual political and social frameworks

**Funding:** Landwirtschaftliche Rentenbank  
**Period:** 01.05.2016 – 30.04.2017  
**Partners:** International FoodNetCenter Bonn (Petersen, Steinhoff-Wagner, Ilg)  
Dr. Christiane Gothe • Communication specialist and journalist in agribusiness, Lilienthal

**Aims:**  
- Identifying the willingness of pig and cattle farmers to change their investments in new production and animal husbandry systems.  
- Evaluating the opinion barometer of the farmers  
- Improving the dialogue between agriculture, society, trade and politics

**Methods:** Literature research, survey at the animal fair Eurotier in Hannover, expert interviews

Strength2Food: Sustainable food chains through public policies: the cases of the EU quality policy and of public sector food procurement

**Funding:** RIA - Research and Innovation action, European Kommission  
**Period:** 03.2016 – 02.2017  
**Partners:**  
University of Newcastle, United Kingdom; Universita Degli Studi Di Parma, Italy; University of Edinburgh, United Kingdom; Wageningen University, Netherlands; Aristotelio Panepistimio Thessalonikis, Greece; Institut National De La Recherche Agronomique, France; Ekonomski Fakultet, Univerzitet U Beogradu, Serbia; Rheinische Friedrich-Wilhelms-Universitat Bonn, Germany; Hogskolen I Oslo Og Akershus, Norway; Sveuciliste U Zagrebu Ekonomski Fakultet, Croatia; Centre De Recerca En Economia I Desenvolupament Agroalimentari-Upc-Irta, Spain; Universita Degli Studi Di Milano, Italy; Szkoła Glowna Gospodarstwa Wiejskiego, Poland; Kasetsart University, Thailand; Truong Dai Hoc Kinh Te Thanh Pho Ho Chi Minh, Vietnam; European Food Information Council, Belgium; Balkan Security Network, Serbia; Filipovic Malada Ivana, Serbia; Coldiretti, Italy; Eco-Sensus Kutato, Oktato Es Kommunikacions Non Profit Korlatolt Felelossegui Tarsasag, Hungary; Glowny Inspektorat Jakosci Handlowej Artykulow Rolno-Spozywczych, Poland; Food Nation Cic, United Kingdom; Consiglio Per La Ricerca In Agricoltura E L’analisi Dell’economia Agraria, Italy; Barilla G. E R. Fratelli Spa, Italy; Ministarstvo Prosvete, Nauke I Tehnoloskog Razvoja, Serbia; Konzum,Trgovina Na Veliko I Malo Dd, Croatia; Municipality of Arilje, Serbia; Consorzio Del Formaggio Parmigiano-Reggiano, Italy; Ecozept Gbr, Germany; Impact Measurement Limited, United Kingdom

**Aims:** Aims to improve the effectiveness of EU food quality schemes (FQS), public sector food procurement (PSFP) and to stimulate Short Food Supply Chains (SFSC) through research, innovation and demonstration activities.

**Methods:** Multitude of qualitative and qualitative methods including innovative research tools such as virtual supermarkets
## Interdisciplinary Research

### Chain Failure and Chain Goods in Sustainable Food Value Chains

<table>
<thead>
<tr>
<th>Funding:</th>
<th>DAAD (German Academic Exchange Service)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period:</td>
<td>01.2016 – 12.2017</td>
</tr>
<tr>
<td>Partners:</td>
<td>International FoodNetCenter Bonn (Hartmann)</td>
</tr>
<tr>
<td>Aims:</td>
<td>Developing a theoretical framework to analyse food chains in order to find essential connecting points for a sustainable restructuring of the chain and deriving from that a reference model as a basis for a dialog between science and economy to process the sector.</td>
</tr>
<tr>
<td>Methods:</td>
<td>Analysing the value chain with the help of the evidence-based reasoning method by integrating the Club theory.</td>
</tr>
</tbody>
</table>

### Tierwohl Atlas

<table>
<thead>
<tr>
<th>Funding:</th>
<th>Ministry for Climate Protection, Environment, Agriculture, Conservation and Consumer Protection of the state of North Rhein Westphalia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period:</td>
<td>04.2015 – 12.2015</td>
</tr>
<tr>
<td>Partners:</td>
<td>International FoodNetCenter Bonn (Petersen), Fachhochschule Südwesftalen (Freitag)</td>
</tr>
<tr>
<td>Aims:</td>
<td>The Tierwohl-Atlas provides an overview of the most important fields of action to improve animal welfare and animal health in the pork and beef production, dairy, poultry and egg products sectors. In 105 individual projects (2009-2015), animal welfare, ethical, economic and scientific aspects of the measures to change and improve conditions for food-producing animals have been considered. The Tierwohl-Atlas NRW was developed in a cooperation between the two KONN members, the University of Bonn and the Fachhochschule Südwesftalen.</td>
</tr>
<tr>
<td>Methods:</td>
<td>Empirical investigations</td>
</tr>
</tbody>
</table>

### AIDAKripb-S SMART Service Alliances for crisis prevention and management in food chains (Proposed)

<table>
<thead>
<tr>
<th>Funding:</th>
<th>Industrial Fond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status:</td>
<td>Re-submission planned in April 2017</td>
</tr>
</tbody>
</table>
| Aims:                 | • Providing and evaluating organizational and technical SMART service structures for companies in the agricultural and food industry in the area of crisis prevention and crisis management  
                        • Interlinking SMEs with specialized technology providers by the cluster management of Bonn.realis |
| Methods:              | • Empirical and experimental investigations for communication in crisis management  
                        • Pilot application                                                                                                         |
**4. Interdisciplinary Research**

### Implementation of animal welfare aspects in German poultry industry (Proposed)

**Funding:** Landwirtschaftliche Rentenbank  
**Status:** Proposed  
**Partners:** International FoodNetCenter Bonn (Petersen)  
Dr. Christiane Gothe (Communication specialist and journalist in agribusiness, Lilienthal)  
**Aims:** Documentation of progresses and future perspectives in regard to implementation of animal welfare aspects in German poultry industry  
**Methods:** Literature research, surveys with practitioners, expert interviews

### Potential for Innovative Chains: unlocking the potential for Competitiveness and Agro-food Sustainability (Proposed)

**Funding:** EU programm  
**Status:** First draft version revised by members. All institutional registration completed. Last Draft version from coordinator expected on Jan. 27, 2017 - to be reviewed and approved by partners:  
**Partners:** Stichting Wageningen Research (Netherlands) (Coordination)  
24 (Universities, Research centers, Private firms)  
**Aims:** To provide in-depth insight into horizontal and vertical collaborations amongst agri-food chain actors, to design and test new business models for co-creation, and to uncover the mechanisms that (dis)enable innovative processes.  
**Methods:** Empirical investigations

### Wissensplattform WIP’1s (Proposed)

**Funding:** Federal Office of Agriculture and Food (BLE)  
**Status:** Submitted June 2016, expected feedback: June 2017  
**Partners:** International FoodNetCenter Bonn (Petersen), KONN (Südekum), EQAsce (Lehnert), Fachhochschule Südwestfalen (Freitag), GIQS (Hamer)  
**Aims:** The research network NRW-Agrar was founded in 2006 with the aim of deepening cooperation in agricultural research. The research network comprises a broader strategy platform, specialist information platforms and common research projects. The network is responsible for the cooperation between members (Landwirtschaftliche Fakultät der Universität Bonn, Fachhochschule Südwestfalen, Forschungszentrum Jülich, Hochschule Bonn/Rhein-Sieg, Hochschule Rheinwaal, Landesamt für Natur-, Umwelt und Verbraucherschutz NRW, Landwirtschaftskammer NRW, Ministerium für Innovation, Wissenschaft und Forschung NRW, Ministerium für Klimaschutz, Umwelt, Landwirtschaft, Naturschutz und Verbraucherschutz NRW) and to use synergy effects, identify country-specific research needs and develop corresponding research topics.  
**Methods:** Literature research, survey, field data collection
4.3 Waste Management

Food production significantly contributes to total global environmental impact. Food and beverages represent 20–30% of the environmental impact of all consumed products in Europe, which includes clothing, communication, transportation and so on. Large quantities of these produced food products are wasted along the entire supply chain. Within the group of food products, the amount of food waste varies greatly. From different available studies, it is evident that most products are thrown away in fruit & vegetable chains, followed by leftovers of homemade dishes and/or ready meals. Although meat only ranks at number 5 on the list of food disposables, meat production is associated with a high usage of energy and water, plus a high emission of green-house gases. Thus wasting products is a problem for environmental, food security and economic reasons.

There are different reasons why food is wasted, e.g. insufficient consumer awareness, habits and expectations, products not conforming to quality or safety requirements, premature spoilage before the “best before” or “use by” date is reached or the non-consumption of food before product expiry. Thus, to address all these different issues and to reach a more sustainable food production a strong cooperation between interdisciplinary research teams is important which are working together on the development of innovative sustainable products and on the optimisation of the waste management along the entire supply chain.

Figure 6: FNC organisation chart: Waste Management
4. Interdisciplinary Research

4.3 DFG Project „Living Handbook of perishable food supply chains“

<table>
<thead>
<tr>
<th>Funding:</th>
<th>Deutsche Forschungsgemeinschaft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period:</td>
<td>03.2016 – 03.2019</td>
</tr>
<tr>
<td>Partners:</td>
<td>International FoodNetCenter Bonn (Kreyenschmidt), IEL University of Bonn, ZB MED Leibniz Information Centre of Life Sciences</td>
</tr>
</tbody>
</table>
| Aims:             | The Living Handbook of perishable food supply chains covers two main topics  
                     1. Country specific information about Cold Chains (Trade Statistics, Structure of market, Country specific regulations, current technologies, challenges)  
                     2. Research activities in the field of Cold Chain Management and technologies (Product and process specific research, transportation systems and logistics, enviromental and sustainability aspects) |
| Methods:          | Literature review, collection of peer-reviewed articles, international meetings |

Customer satisfaction survey on apples

<table>
<thead>
<tr>
<th>Funding:</th>
<th>Private cooperation project: University of Warsaw and University of Bonn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period:</td>
<td>10.2016 – 03.2017</td>
</tr>
<tr>
<td>Partners:</td>
<td>EQAsce, International FoodNetCenter Bonn (Petersen), University of Warsaw</td>
</tr>
<tr>
<td>Aims:</td>
<td>Customer-satisfaction analysis and ranking. Test two new developed Polish apple types and comparison to same German type; suggestions for improvements and evaluation of the prospects on the German market</td>
</tr>
<tr>
<td>Methods:</td>
<td>Sensory evaluation</td>
</tr>
</tbody>
</table>

Coolfresh – Development of internationally applicable test standards to evaluate the essential food preservation characteristics of household refrigerating appliances (Proposed)

<table>
<thead>
<tr>
<th>Funding:</th>
<th>Federal Ministry for Economic Affairs and Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status:</td>
<td>Submitted 08.2016</td>
</tr>
<tr>
<td>Partners:</td>
<td>University of Applied Sciences Albstadt-Sigmaringen, University of Bonn, BSH Home Appliances GmbH and Liebherr Home Appliances GmbH (University of Bonn)</td>
</tr>
<tr>
<td>Aims:</td>
<td>The objective of the project is to develop and establish internationally applicable test standards to evaluate the essential food preservation characteristics of household refrigerating appliances. In a first step, the influence of different storage conditions and hygienic features on the quality and freshness of food should be analysed. Subsequently, standardised and reproducible test methods for the evaluation of the essential food preservation characteristics should be developed.</td>
</tr>
<tr>
<td>Methods:</td>
<td>To assess the replicability and reproducibility of the test methods, various Round Robin tests are planned in the third phase involving a few external test institutes. In a final step, content-related and editorial changes should be made before submitting the results to the German (DKE; and indirectly to the European (CENELEC) and International (IEC)) standardisation committee.</td>
</tr>
</tbody>
</table>
Interdisciplinary Research

### Application of new packaging solutions to reduce food losses in West Africa by extending shelf-life of local perishable foods (Proposed)

**Funding:** Federal office for agriculture and food (BLE)

**Status:** Applied 30.11.16

**Partners:** University of Bonn (Cold Chain Management Group), Uni Abomey-Calavi

**Aims:** Innovative approaches to process local food in Sub-Saharan Africa and Southeast Asia, which contribute to improved nutrition, as well as qualitative and quantitative reduction of losses (Announcement No. 18/16/32, BMEL)

**Methods:** The focus will be on the Beninese food supply chains and the studies will be conducted with the following products: “waragashi”, a traditional cheese made from cow’s milk, grass-scutter (Thyronomys spp.) meat, and the African garden eggplant (Solanum macrocarpon), a leafy vegetable.

### Bio-based products (Coordinator: University of Bonn (INRES)) (Proposed)

**Funding:** Ministry for innovation, science and research of North-Rhine Westphalia (MIWF)

**Status:** Applied 31.07.2016

**Partners:** University of Bonn (IEL), Cold Chain Management Group, University of Bonn (INRES (Coordinator), IEL, ILR), Hochschule Bonn-Rhein-Sieg, there are also more than 10 industry companies involved in the project

**Aims:** Development of sustainable packaging solutions out of regional biomass for use in agricultural products.

**Methods:** Quick growing grasses, so-called ‘low-input plants’ are the resources of this product, cultivated at the University of Bonn. After material utilization new sustainable paper and bio-based polymer packaging will be produced. Bio-active additives will be integrated to slow down the loss of freshness and therefore reduce rejects in the supply chain.

### Development and implementation of intelligent packaging solutions to increase in resource efficiency in chilled supply-chains through optimization of cold chain management and determination of shelf life in real-time (Proposed)

**Funding:** Federal office for agriculture and food (BLE)

**Status:** Applied 09.2016

**Partners:** University of Bonn (Cold Chain Management Group), University of Bayreuth, EUFH, FH Münster, Apetito, Bizerba Labels & Consumables, European EPC Competence Center, Genusshandwerker, Handelsverband NRW, Landpack, Steinbeis-Forschungszentrum, Wolfurstspezialitäten, Metro Logistics

**Aims:** The aim of this project is the development of an intelligent packaging solution for different supply chains (B2B and B2C) to improve the quality, the safety and the process and product efficiency of refrigerated goods in the supply chain in the long run.

**Methods:** The main approach focus on the measurability of the shelf life in real time at each point of the supply chain provided by the information of the intelligent packaging.
5. Events

5.1 Conference Series

10th International Forum on System Dynamics and Innovation in Food Networks (Igls-Forum)  
(15th - 19th February 2016)

The event that took place on February 15th - 19th, 2016 represented the 10th conference in a conference series organized annually by Prof. Schiefer and his team in Igls/Innsbruck, Austria. The conference is a meeting of primarily senior scientists engaged in management, economics, policy and consumer research with a focus on the European and global food sector. It is supported by major European and international scientific associations such as the European Association of Agricultural Economists (EAAE) which lists the conference as one of its European seminars, the International Food and Agribusiness Management Association (IFAMA) and the International Commission of Agricultural and Food Engineers (CIGR).

In 2015, the main focus of the conference was on water as a scarce resource-involving policy, trade and management issues. The last conference of 2016 focused on the selected theme „Future of Food“, interacting with actors and experts in the field (“science meets reality”).

The presentations of the conference are published in a series of freely available e-proceedings while the best papers are published in the electronic open source journal „International Journal on Food System Dynamics“. Proceedings and journal are accessible through http://www.foodsystemdynamics.org/.

The annual event has the character of a „Think Tank“, in which future lectures are examined and discussed by experienced scientists and industry experts. You can find the focus themes of the previous conferences from 2008 until 2016 in the list below:

2017: System Dynamics and Innovation in Food Networks  
Mr. Daniele Rossi  
Mr. Jean-Jacques Vandenhende  
Dr. Dr. Christian Paterman

2015: Water as a crucial resource  
Prof. Dr. Lundquist  
Mr. Cesare Ronchi  
Dr. Grobicki

2014: Sustainability, Water, and Emerging Management Opportunities  
Dr. Josef Haber  
Prof. Rod Franklin  
Dr. Ashok Chapagain

2013: Urban Agriculture, Food Logistics and PPP  
Mr. A. Modig  
Prof. Dr. M. Kohler

2012: Corporate Social Responsibility  
Mr. M. Coomans  
Ms. M. Rute  
Mr. B. Geier  
Mr. G. Calzolari

2011: Scenario Dynamics - Challenges Ahead  
Dr. Angela Wilkinson  
Dr. Juan Gonzalez Valero

2010: The Challenge of Transparent Food  
Mr. F. Ahlers  
Mr. H. Hagspiel  
Mr. J. Eiffman

2009: Science meets the world of regulations  
Mr. Coomans  
Prof. Dr. DeHaen  
Dr. Fischler

2008: Science meets industry  
Dr. Haber  
Dr. Joehr

2007: System Dynamics and Innovation in Food Networks  
Mr. Mark Schauer  
Prof. Erik Mathijs

2006: Scenario Dynamics - Challenges Ahead  
Dr. Angela Wilkinson  
Dr. Juan Gonzalez Valero

2005: Water as a crucial resource  
Prof. Dr. Lundquist  
Mr. Cesare Ronchi  
Dr. Grobicki

2004: Sustainability, Water, and Emerging Management Opportunities  
Dr. Josef Haber  
Prof. Rod Franklin  
Dr. Ashok Chapagain

2003: Urban Agriculture, Food Logistics and PPP  
Mr. A. Modig  
Prof. Dr. M. Kohler

2002: Corporate Social Responsibility  
Mr. M. Coomans  
Ms. M. Rute  
Mr. B. Geier  
Mr. G. Calzolari

2001: Scenario Dynamics - Challenges Ahead  
Dr. Angela Wilkinson  
Dr. Juan Gonzalez Valero
Challenges in temperature controlled supply chains have increased steadily during the last years. The delivery of high quality and safe products worldwide as well as a sustainable food production become more and more important.

Therefore, food producer, logistic companies, wholesaler and retailer are searching for solutions to control important environmental parameters, to manage product quality, safety and shelf life and to increase resource efficiency over the entire chain.

Furthermore, consumers want to be aware about sustainability aspects in terms of production processes, logistic pathways and applied technologies and materials. Thus balancing cold chain approaches, logistic concepts and sustainability will be one of the biggest challenges in the coming years.

The 6th International Conference Cold Chain Management took place on 6th-7th of June 2016 at the University of Bonn and brought together people from research and industry sector as well as of public organisations.

The conference was organized by the University of Bonn, Cold-Chain Management Group in cooperation with the European University of Applied Sciences, Brühl and addressed all organisations which work in the field of cold-chain management including food producer, retailer, logistic companies, technology, software developer and consumer associations.
5.2 Awards and Certificates

First certificates in “Professional Lecturer in Academia”

Since 2014 the BZH University of Bonn offers to all lecturers a basic qualification honored with the certificate “Professional Lecturer in Academia”.

Dr. Julia Steinhoff-Wagner is one of the first ten lecturers from University of Bonn who has been rewarded with the certificate. On 6th July 2016 the participants presented their projects and received their certificates by Prof. Dr. Karin Holm-Müller, the Prorector for teaching and learning.

Dr. Julia Steinhoff-Wagner developed an experience-based video training that is addressed to students who are close to their graduation. The future animal scientists do not have to prove practical work before and during their study anymore. The video training explain the methodical procedures and common pitfalls at the health check of piglets as example. In doing so the lecturer refers to the learning experiences of the students.

Awards of Dr. Dr. Ricarda Schmithausen:

- Final round of top graduate theses at Bonn University, selected by the faculty for the 2016 Bonn University Best Thesis Award
- 2015/2016 Best Thesis at the Agricultural Faculty of the Bonn University
- 2016 Best Thesis Award from the Paul Ehrlich Society (PEG)
- 2016 Faculty Award from the Bonn University Agricultural Faculty
- 2015 Best Thesis Award from the German Society for Animal Production
Events

First EQA Quality Systems Manager Junior Certificates
(Bonn, 2nd July 2016)

After the University Festival 2016 the first EQA Quality Systems Manager Junior certificates were submitted by Prof. Dr. Brigitte Petersen and Dr. Susanne Lehnert, both members of the EQAsce Management Board. Accompanying to their studies of agricultural sciences or nutritional sciences the students had completed the formation of DGQ Quality Systems Manager Junior. At the same time they received the certificate of EQA Quality Systems Manager Junior and therefore for the first time among the national the international acknowledgement of their efforts. To stimulate their further qualification activities they got several gifts and a voucher for an EQA Food Chain Manager course on August 24 - 31 2016.

First EQA Food Chain Manager
(Bonn, 24th - 31st August 2016)

From the 24th – 31st of August 2016 EQAsce and FoodNetCenter organized the first international aligned course „Summerschool Food Chain Manager“ in Bonn.

The course is addressed to employees and postgraduates who deal with quality management tasks in the agricultural and food sector.

Due to intensive promotion, the participants are now able to integrate suitable quality management methods in their daily work and to improve the cooperation of client and supplier. Four of the participants successfully took an examination and were rewarded with the certificate EQA Food Chain Manager.

Figure 11: Handover of the EQA Quality Systems Manager Junior certificates.

Figure 12: Handover of the EQA Food Chain Manager certificates. From left to right: Prof. Dr. Brigitte Petersen, Katharina Brüggemann, Onur Bozkurt, Simon Schmitz, Sonja Gollan and Dr. Susanne Lehnert.
5. Events

5.3 Calendar of Events

Seminar One Health: Antibiotic Resistances
(Bonn, 11th November 2015)

On the 11th of November 2015 the International FoodNetCenter organized in cooperation with EQAsce a seminar on the subject „One Health: Antibiotic Resistances“ in Münster-Carré, Bonn.

The topic of the first part of the seminar was development and distribution of resistance mechanisms in bacteria. Afterwards, operational issues and legal requirements were intensively discussed and specific precaution and avoidance measures could be established.

In addition, participants were able to categorize the most important instruments for the design of monitoring measurements. Finally, the awareness of their own duties on prevention, guidance and control was sharpened.

Workshop “Veterinary drugs in environmental concepts and possibilities for action”
(Berlin, 9th – 10th March 2016)

From the 9th of March to the 10th of March 2016, the Umweltbundesamt organized a workshop with many presentations and world cafés in the press and visitor center of the Bundespresseamt in Berlin.

Dr. Julia Steinhoff-Wagner from the University of Bonn gave two presentations on the topics: “Preventive measures in agricultural livestock for the reduction of veterinary drugs” and “Environmental monitoring and communication”. The second day was moderated by Prof. Dr. Brigitte Petersen.

Figure 13: Dr. Julia Steinhoff-Wagner during her presentation

Kick-off meeting HyReKA
(Bonn, 1st July 2016)

On the 1st of July 2016 the International FoodNet-Center organized the Kick-off event “HYREKA” in Bonn. The joint project HyReKA is a government-funded project where the highly relevant topic of distribution of antibiotic-resistant bacteria in waste water is researched. During the meeting the project and the research plan were presented to all participants including an introduction to the waste water as a source for the dissemination of resistance genes. Second, the projects that will test differently applied aspects of waste water treatment and the integration into national and international research initiatives were presented.
Events

Communication strategies for the reduction of veterinary medicinal products from agriculture
(Dessau, 28th July 2016)

On the 28th of July 2016 the International FoodNetCenter organized the Kick off-event “Communication strategies for the reduction of veterinary medicinal products from agriculture” in Dessau.

Partners: Egologic Institute, Berlin
HYDOR Consult GmbH, Berlin
EQAsce, Bonn
Landwirtschaftskammer NRW, Münster

10 years of research network
(Düsseldorf, 14th September 2016)

On the 14th of September 2016 the International FoodNetCenter organized in cooperation with EQAsce the event “10 years of research network” in Düsseldorf.

The overarching project Tierwohl-Atlas and the projects in university education and communication strategies for the reduction of veterinary medicinal products and resistant germs from agriculture were presented.

European OneHealth / EcoHealth Workshop
(Brussels, 6th - 7th October 2016)

The global “One Health Day” was organized by three international One Health groups and took place on the 3rd of November 2016. One international event ‘European OneHealth/ EcoHealth Workshop’ was hold in Brussels from 6th-7th of October 2016. In order to not limit the focus beforehand, the OneHealth and the EcoHealth concepts were explicitly combined. The program of the workshop provided a combination of topical and generic integrative sessions. In the topical sessions, specialists exchanged experiences from their specialized fields and projects, whilst also addressing the generic OneHealth perspective.

In these sessions the following topics were discussed: Vectors and vector borne diseases, zoonotic diseases, cross-pollinating agro-eco-human health perspectives, environmental and internal microbiome and nature health benefits. All participants jointly discussed the OneHealth part on their experiences, opportunities and challenges surpassing more restricted topical foci.
5. Events

KONN Workshop „Lifestock farming, use of antibiotics and consumer health“
(Bonn, 3rd November 2016)

The workshop „Lifestock farming, use of antibiotics and consumer health” organized by the ‘Kompetenznetzwerk Nutztierforschung Nordrhein-Westfalen’ was held on the 3rd of November 2016. It was split into three main topics: antibiotic databases, precaution and knowledge transfer. The participants were informed about the current state, the possibilities and limitations of the antibiotic database in Germany and its vulnerabilities in comparison to other important manufacturing countries. In the second workshop, the depletion of antibiotic usage to prevent the resistance development and distribution in agricultural holdings was discussed. The transfer of knowledge as the most effective measurement enhances not only the animal welfare as well as environment and consumer protection, but also the consumer perception.

Following the meeting a workshop on „Livestock farming, antibiotic use and consumer health“ took place as part of the event. The aim of the workshop was to elaborate possible approaches that could lead to improved implementation and acceptance of hygiene measures in livestock farms. Firstly, the topic complexes of antibiotics, the reduction of implementation barriers as well as the improvement of health protection and protection of the environment were presented in three introductory lectures and subsequently discussed extensively in working groups. Approx. 75 people participated in the event.

10th anniversary of the International FoodNetCenter
(Bonn, 3rd November 2016)

At the One-Health-Day on the 3rd of November, the International FoodNetCenter (FNC) had celebrated its tenth anniversary. It took place subsequent to the KONN workshops.

Today the FNC is a compilation of 18 university groups from 9 institutes and 3 faculties. The long-term chairwoman and spokeswoman of the interdisciplinary center, Prof. Dr. Brigitte Petersen, summarizes: From 2006 to 2016 the FNC was involved in 57 funded projects with more than 600 partners. 104 doctorates and 400 master students were financed through the received funds. About 2,000 people participated in events hosted by the FNC like IGLS-Forum, the Cold Chain Management conferences and the IRIS-Workshops in Bonn.
Events

International FoodNetCenter at the Eurotier 2016
(Hannover, 15th - 18th November 2016)

Eurotier is the world’s leading fair for animal husbandry and livestock management which attracts exhibitors from all over the world. Along with other research groups and institutes the International FoodNetCenter Bonn also had a stand at the Eurotier 2016. During the fair the FNC team and our hardworking student assistants carried out a survey conducted by the agricultural journalist Dr. Christiane Gothe in cooperation with the University of Bonn. The survey was directed to all cattle and pig farmers in order to identify their willingness to change their investments in new production and animal husbandry systems.

The results and other indicators can be used for a prognosis for animal husbandry of tomorrow in Germany.

SMART SERVICES: International Workshop during the Eurotier
(Hannover, 16th November 2016)

On the 16th of November 2016 an international workshop dealing with „Smart Services – new challenges, new solutions“ took place in the Blue Hall of the Hannover Congress Centre, organized by the International FoodNetCenter of the University of Bonn and the European Qualification Alliance (EQA).

Between the breed and the slaughter a lot of data is captured within the value chain of pork. This data can be used for consulting, optimizing of products and traceability of products. Therefore, it is necessary that these data are interlinked and available for all users. To this end, Smartservices adapted to a specific user group will be helpful.

The introduction of company-wide and customer-oriented quality politics with clear statements to animal welfare services, regional-oriented breeding and sustainability needs to be improved. The sector platform “SmartPork”, an interface between producers, operators and users was founded in January 2016 to achieve these aims quickly in the whole industry.

In the morning international speakers talked about innovative tools and transponder for data collection such as flexible software platforms for the evaluation of data. In the afternoon improvement of animal health and welfare based on diagnostic data, the treatment of big amounts of data and the extraction of meaningful field data were discussed.
The FNC Annual General Meeting took place in January 2017. The old board was re-elected for another two years.

The most important task the Board has undertaken is to develop a future concept for the Center with the help of the Scientific Advisory Board and to define important goals. In the next 24 months, the following activities will be undertaken: – closer cooperation with the Center CIDRE, – coordinated cooperation between the Rectorate in the area of internationalization strategy, – the pooling of resources from both FNC-driven networks Bonn.realis and bio Innovation Park BMBF Competition „Internationalization of Top Clusters, Future Projects and Networks“ – Increased Participation in Summer Schools and PhD Training via the Theodor Brinkmann Graduate School and the NRW Progress Board – Expansion of continuing education courses within the framework of the Global Health Study Program and EQAsce’s Life-Long Learning Concept.

Responsible for all these areas of action have already been addressed and the first dates for the demonstration of the cooperations are fixed. In the following, three important activities for the future are presented in more detail.

At the same time, an excellent cooperation climate in Bonn can be set up at the University of Bonn on the basis of appropriate funding measures by the federal, state and EU member states and the reorientation of higher education policy.

The already established cooperation with all universities on the ground, companies and governmental institutions in recent years lead to profile formation and concentration of competences and generate successful synergies. The knowledge potential generated by the FNC often finds access to the market only in the partnership with companies, and vice versa, agricultural products and transformation processes in the economy can not be successfully implemented without the scientific accompaniment.

Important preconditions for sustainable cooperation are to be created jointly in the next months in the sense of George Bernard Shaw.

“If you have an apple and I have an apple and we exchange the apples, each of us will still have an apple. But if you have an idea and I have an idea and we exchange ideas, then each one of us will have two ideas”
Within the last years, the ICT sector in both networks bonn.realis and bio innovation park has performed research that enables academics and the agricultural industry to access innovative markets.

On the other hand, a significant gap between these two sectors consists because of the difference in primary goals and priorities. While active publication and continuing debates are key activities in academia, securing standardization and intellectual property rights are the main objectives in the ICT and agroindustry. The gap caused by these factors is increasing significantly, particularly in the domain of ICT, and it becomes a high barrier for researchers in academia dealing with practical bottleneck problems like food safety, one health, quality- and crisis management in food chains or in making breakthroughs.

The special knowledge platform STEPS is devoted to connect the gap between academia and ICT, agro food Industry and other public-private partnership organizations. The goals of the STEPS platform will be to share open problems, solution methods, patents and standards in ICT industry and to call for new interest, ideas and new concepts in future supported by academics.

Our genuinely inter- and transdisciplinary approach will contribute to a fundamentally understanding of the field of sustainable and digital transformation and will identify new concrete measures to improve communication and coordination outcomes for a cluster-management in international networks. Leverage points are sustainability transformation in specific regions and global food and feed chains.
6. Future Strategy

6.1 One of the key challenges of STEPS is to understand how changes in regions and chains as interconnected social-ecological systems facilitate the transformation to sustainability.

Four leverage points will be analyzed:

1. Organizational and institutional dynamics in the cluster region and in global food chains
2. Human-livestock environment interactions and processes in public health change management and crisis management
3. Sustainability-related knowledge creation or re-thinking in the development of energy neutral model regions and creating value from non-food biomass.
4. New interdisciplinary study courses in the fields of sustainability and global health.

In future the STEPS-SMART service platform will inform students and young professionals on current research findings and career opportunities in the region and in international food chains. Furthermore, collaborations with agrifood clusters in Europe and with the elite University Wageningen in the Netherlands continuously advance the international networking of the cluster.

“Digitalization” plays a central role in the cluster’s structure and process innovations.

STEPS-cluster management is currently providing support services for the successful market entry of start-ups, spin-offs and SMEs.
6.2. Joint Masters Programme in Global Health

The joint Master programme in „Global Health Risk Management and Hygiene Policies“ is hosted through a collaboration between the University of Bonn and the Institute of Environment and Human Security (EHS) at the United Nations University, also in Bonn. This modular course is offered to post graduate students from around the world and will be taught in English.

Alongside internships and the Master thesis the programme contains 10 intensive study modules (120 ECTS).

Fields of study:

- Basics of global health, public health and hygiene infrastructure and policies.
- Control of communicable diseases, mother/child health, environmental disaster management.
- Health systems and management structures.
- From MDGs to SDGs as guiding principles and global consent.
- Health risk assessment and capacity building in the public health sector.

As part of the registration process, candidates must complete the “Application form” available on the homepage.

For more informations about the masters programme and the application process please contact via email to secretary@MGH-uni-bonn.de.
OBJECTIVES

Individual, regional, and global health of humans and animals is interconnected, pointing to the need for a “One Health” perspective. Antimicrobial resistances as well as foodborne diseases are prominent examples of those close interlinkages. Inappropriate use of antibiotics in human medicine and agricultural production has exerted an enormous selection pressure on the earth microbiome and has increased antimicrobial resistance globally. Many zoonoses relate in some respect to animals in the food production chain and induce foodborne diseases. With a growing rate of antimicrobial resistance among zoonotic pathogens, the consequences of these infections for human health become even more problematic.

There is a need for stronger collaboration between various disciplines to inspire solutions that may help to protect human and animal health as well as food and environmental safety. Against this background the objective of the congress ‘One Health and Food Safety’ is to bring together researchers from different disciplines including human and veterinary medicine, animal, plant and environmental science, public health politics, management and economics.

On the occasion on University Bonn 200 anniversary an international Congress is planed in September 2018.

TOPICS

- Evolution and dissemination of antimicrobial resistance: One Health, One World
- Antimicrobial resistance in the environment
- Reflection of antibiotic misuse in human and animal treatment by stakeholders (citizens, farmers, physicians, veterinaries)
- Strategies to prevent the spread of diseases and multi-resistant bacteria in hospitals and animal production
- The role of innovation in controlling antimicrobial resistance in food production, hospitals and wastewater treatment
- A ‘One Health’ public policy approach to antimicrobial resistance
- Preventing and managing foodborne diseases
- Emerging foodborne or zoonotic infections
- The role of transparency, certification and collaboration in improving food safety
- Pharmaceutical residues in the food chain and the environment
- Strategies of the agri-food sector to secure food safety and consumers’ trust
- Technological and process innovations to improve food safety
- Food safety laws and regulations in an interdependent world
- Food-related risk analysis, management and communication
- Economics of antibiotic resistance
- Diet and Health

FIXED DATES

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Early Bird Registration Deadline: 30 June, 2018

Deadline for Online Registration: 1 September, 2018
Future Strategy

ORGANISATION

Programme Committee

Chair: Prof. Dr. Monika Hartmann, International FoodNetCenter, University of Bonn
Prof. Wulf Amelung, Institute of Crop Science and Resource Conservation, University of Bonn
Dr. Chad M. Baum, Department Technology and Innovation Management in Agribusiness, University of Bonn
Prof. Dr. Gabriele Bierbaum, Institute of Medical Microbiology, Immunology and Parasitology, University of Bonn, University Hospital
Prof. Dr. Christian Borgemeister, Center for Development Research, University of Bonn, University Hospital
Prof. Dr. Martin Exner, Institute for Hygiene and Public Health, University of Bonn, University Hospital
Dr. Daniel Hawes, Institute for Food and Resource Economics, University of Bonn
Prof. Dr. Judith Kreyenschmidt, Geisenheim University
Prof. Dr. Ute Noethlings, Institute of Nutritional and Food Sciences, University of Bonn
Prof. Dr. Jakob Reyner, Institute for Environment and Human Security, United Nations University, Bonn
Dr. Helmut Saatkamp, Department of Social Sciences, Subdivision Business Economics, Wageningen University and Research
Prof. Dr. Thomas Selhorst, Federal Institute for Risk Assessment (BfR)
Dr. Julia Steinhoff-Wagner, Institute of Animal Science, University of Bonn

Organisation Committee

Chair: Prof. Dr. Brigitte Petersen, International FoodNetCenter, University of Bonn
Dr. Susanne Lehnert, Education and Qualification Alliance SCE, Bonn
Petra Heinrich, Institute of Animal Science, University of Bonn

SCHEDULE DRAFT

Tuesday, 18 September, 2018

9:00 am Registration and Coffee
9:30 am Welcome and Introduction
10:00 am Plenary Session I (Two Presentations & Discussion)
11:30 am Refreshment Break
12:00 pm Parallel Session I (Two Presentations & Discussion)
1:00 pm Lunch
2:00 pm Parallel Session II (Three Presentations & Discussion)
3:30 pm Refreshment Break
4:00 pm Parallel Session III (Three Presentations & Discussion)
5:30 pm Poster Session & Wine Tasting
7:00 pm Rhine River Boat Cruise including Dinner

Wednesday, 19 September, 2018

9:00 am Plenary Session II (Two Presentations & Discussion)
10:30 am Poster Session & Coffee
12:00 pm Lunch
1:00 pm Parallel Session V (Three Presentations & Discussion)
2:30 pm Refreshment Break
3:00 pm Panel Discussion
5:00 pm Close of Congress
Future Strategy

6.4. Themetic University Network

THEMATIC FOCUS

Figure 21 shows three main topics under the overall topic “Innovation Towards Sustainable Food and Human Safety” and nine sub-fields which are contents within the planned research cooperation agreements.

In addition, further collaboration will take place in ‘horizontal activities’ to facilitate and to manage the thematic research and education network. The research tasks are linked to each other and the horizontal activities will build a sustainable fundament for long impact of the TUN EQA.

Members of the Steering Committee will fully consist of representatives of member universities who have signed the present MOU and will contribute to the activities of the Project Teams and the Evaluation Team.

The road map regarding the Project Teams and the Evaluation Team will be decided on 8 October, 2017. The Project Teams will take active part in the cross-sectional tasks and the research co-operations shown in Figure 1.

Decisions regarding the parties involved in the Steering Committee and the two teams will be made upon mutual agreement within the TUN EQA.

Each party is obliged to actively promote the common educational and scientific goals of the TUN EQA.

AGREEMENT

The overall objectives of TUN EQAsce (Thematic University-Network of EQAsce) are:

- expanding and deepening partnerships such as workshops, strategy development meetings, joint summer schools etc.,
- creating joint degree programs and certification models in the field of Food Chain Management, Food Safety and Health Management and Crisis Management,
- establishing a joint TUN EQA Knowledge and Registration Platform, and
- contributing to continuous improvement of contents, technical and organizational support of the platform.
Future Strategy

CONCEPT AND OBJECTIVES

Objective of the Thematic University Network of the EQAsce (hereinafter “TUN EQA”) is the extension and deepening of cooperation between knowledge providers in Europe and other parts of the world. There is a specific need for innovative solutions to support education and qualification in the fields of quality, risk, crisis and audit management. The challenge is to solve current and foreseeable problems in international agri-food chains with the support of an interdisciplinary and international TUN EQA Knowledge and Registration Platform.

The overall objective of the TUN EQA is to deepen existing relationships and to create future relationships between universities and the Education and Qualification Alliance (EQAsce), which has been founded in 2015 as a startup of the International Food-NetCenter of the University of Bonn. This objective will be reached by means of the joint TUN EQA Knowledge and Registration Platform and joint qualification standards for:

- Food Chain Manager
- Food Safety and Health Manager
- Crisis Manager

The TUN EQA’s aim is to achieve mutual recognition, registration and certification of qualifications in the scopes Agriculture and Food and Feed Industry, educational programs and academics and professionals. The concept and objectives of the cooperation of universities is to gain:

- added value of TUN EQA-based competence certificates,
- an outstanding reputation by worldwide accepted processes of assessment, examination, certification and re-certification used in accordance with ISO/IEC 17024 Standard’s requirements and
- closer relationships to leading international organizations in the fields of Quality Management, Food Safety and Health, Sustainability and Public-Private-Partnership-Networks.

Figure 23: Knowledge and Registration Platform