June 20, 2011 (Monday) Pre-Congress Seminars

Ministry of Rural Development **Kossuth Lajos tér 11. Budapest V.**
CONFERENCE ROOM **Monday 10:00 – 18:00**

1.4. NEW QUALITY AND SAFETY REGULATIONS AND DEVELOPMENTS ON THE AGRIFOOD AREA

Seminar Chair: Zoltán Kálmán, Ministry of Rural Development, Hungary

17.20 QUARISMA – QUAlity and RIsk MAnagement in Meat Producing Chains
Juliane Lang, Detert Brinkmann, and ***Brigitte Petersen****, University of Bonn, Institute for Animal Science, Germany*

Petersen, Brigitte (Germany)

Prof. Dr. Brigitte Petersen received in 1977 an Agricultural Engineer Diploma at the University of Bonn, Germany; in 1982 she had Post-Doc Scholarship at the University of California, Davis, USA. In 1985 she habilitated in the field of Animal Hygiene at the University of Bonn. She was scientist at the Institute of Anatomy, Physiology and Hygiene of Animals, project coordinator: Assessment of the impact of the hormone interdiction during fattening of cattle and pig and she was appointed as C3 Professor for „Preventive Health Management" at the University of Bonn. In 2008 she got Best Paper Award in the category “Chain Management” at the 8th International Conference on Management in AgriFood Chains and Networks, Wageningen, the Netherlands.

Since 1986 she is Member of the Association of Informatics in Agriculture, Forest and Food Industry (GIL); 1991-1993 Chairperson. She is Founder Member of the International FoodNetCenter, Bonn; Chairperson of the Steering committee of AgriZert and of the incorporated society GIQS e.V. non profit organisation “Cross Border Integrated Quality Assurance” engaged in public-private partnership, research and development.

QUARISMA – QUAlity and RISk MAnagament in meat producing chains

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Introduction

In the meat sector currently quality and food safety concerns receive increased attention and have been the focus of initiatives on various levels of activity (Petersen 2003, Schulze Althoff et al. 2005, Trienekens et al. 2009). The global dependencies and linkages in the agri-food sector, one of the biggest economic sectors, with its importance for basic human needs present a challenge to research and research co-operation. Fundamental changes are emerging in the organisation of regional, national and international food chains and networks. These changes have a remarkable impact on the entire meat industry and have consequences for the classical one-sided research approach. The challenge for the meat sector is to grasp new strategies in inter-enterprise quality and risk management systems to change the current situation in relation to inadequate mutual coordination, lack of trust and opportunism in international value chains.

From the scientific view there are two parallel innovation challenges:

1. The chain inversion meaning the transition from a supply to a demand driven supply chain and the self responsibility of producers.
2. The support of new sustainable technologies in food safety control systems to enable an effective quality management, driven by business operators instead of government.

To meet these various challenges a multi-disciplinary approach is required, encompassing economical, technological, social, legal and environmental disciplines. On this basis the project QUARISMA, standing for **QUA**lity and **RIS**k **MA**nagement in meat chains, was initiated (Brinkmann 2009). This acronym comprises the linking of tasks and methods in quality, chain and risk management and is funded by the Marie Curie Actions of the EUs 7th research framework programme (FP7) for a period of four years (2009-13). QUARISMA represents an interdisciplinary and intersectoral co-operation of European main areas of meat production, localised cross-border in the Netherlands and the North-west as well as Bavaria in Germany. The various active collaborations between the two universities of Bonn and Wageningen and the private organisations VION Food Group and three members of the DRV (Deutscher Raiffeisenverband e.V.) in the meat sector supported by the public-private-partnership GIQS (Grenzüberschreitende Integrierte Qualitätssicherung e.V.) will be consolidated to come to grips with the complexity of requirements and developments determining the manufacturing of high quality and safe meat products. The project participants are presented in Table 1.

Table 1: List of participants

No.	Legal Entity	Department
1	Grenzüberschreitende Integrierte Qualitätssicherung e.V. (GIQS)	Board of Management
2	University of Bonn (UB)	International Centre for Food Chain and Network Research (FNC)
3	Wageningen University (WU)	Wageningen Expertise Center for Chain and Network Science (CNS)
4	VION Food Group - VION North (VION)	Deptartment of Quality Assurance
5	Deutscher Raiffeisenverband (DRV)	Department of Livestock and Meat
6	Agrizert Qualifizierungs GmbH	Board of Management

No.	Legal Entity	Department
7	Erzeugergemeinschaft Osnabrück eG	Board of Management
8	Erzeugergemeinschaft Südost-Bayern eG	Board of Management, Department of Quality Assurance

The participants have chosen to make use of the EU Marie Curie Programme IAPP (Industry-Academia Partnerships und Pathways). The IAPP-Programme is the best way to deploy a critical mass of resources in order to integrate and exchange different aspects of food safety and quality, ensuring that intersectoral co-operation is better integrated into chain management development in the sector. Furthermore, QUARISMA will be based on a recognised education and training programme in the area of quality management (QM), chain management (CM) and risk management (RM). Specialised staff is one of the prerequisites to improve the effectiveness of research and development in the European meat sector. These knowledgeable and skilled individuals will exchange between research institutions and industry. This approach is valuable as industry often shows a lack of awareness about the resource potential of academia whereas academia often shows inadequate marketing of academia's strengths to industry. QUARISMA aims at eliminating this deficit by the exchanges. Moreover by education and training activities an efficient transfer of knowledge back to the participating organisations will be ensured supported by built-in return mechanisms. Thus, both academia as well as industry benefit on equal terms from the direct and quick transfer of knowledge. Overall, the project intends to recruit a total of four persons, thereof two persons for the industry and two for GIQS and to exchange 22 persons. Thereof four shall be exchanged from the industry to research and 18 vice versa. For example Wageningen University shall send 12 persons, the University of Bonn send six to organisations and companies in the meat industry.

QUARISMA is outstanding in several principles, as the following attributes and intentions:

- Private-public knowledge infrastructure
- Design of a private-public knowledge development approach
- Long-term private-public-partnerships
- Sustainable production approach
- Research network building

Project objectives and methodical background

The project QUARISMA has a double goal: to demonstrate, together with entrepreneurs that there are viable new pathways, and to prove, together with knowledge institutions, that the required knowledge can be delivered. The overall objective of QUARISMA is to promote the innovation, implementation and internationalisation of intersectoral knowledge transfer in the field of inter-enterprise QM and RM in the meat industry. QUARISMA covers the complete meat chain which is important as sustainable safety of meat can only be guaranteed by the integration of QM and RM systems in the entire food supply chain "from stable to table".

QUARISMA will introduce the techno-managerial approach, which aims at integrating the different disciplines to contribute to achieve superior quality. The basis of the techno-managerial approach is that quality issues are simultaneously perceived and analysed from research, technical and managerial perspectives. The activities and responsibilities are divided into two levels: the programme level and the project level. The first is characterised by intersectoral management and coordinating activities. The latter is sub-divided into five IAPP-activities existing under the umbrella of joint research. These activities are

secondments, recruitments, career exploratory actions, networking and open international conferences (Figure 1).

Figure 1: The framework of QUARISMA

In order to achieve the overall objectives, three research priority areas have been identified:
1. Chain management
2. Quality and information management
3. Risk management and food safety

In these areas the partners decided to co-operate in a sustainable and consistent way. The linkages between the research priority areas are shown in Figure 2.

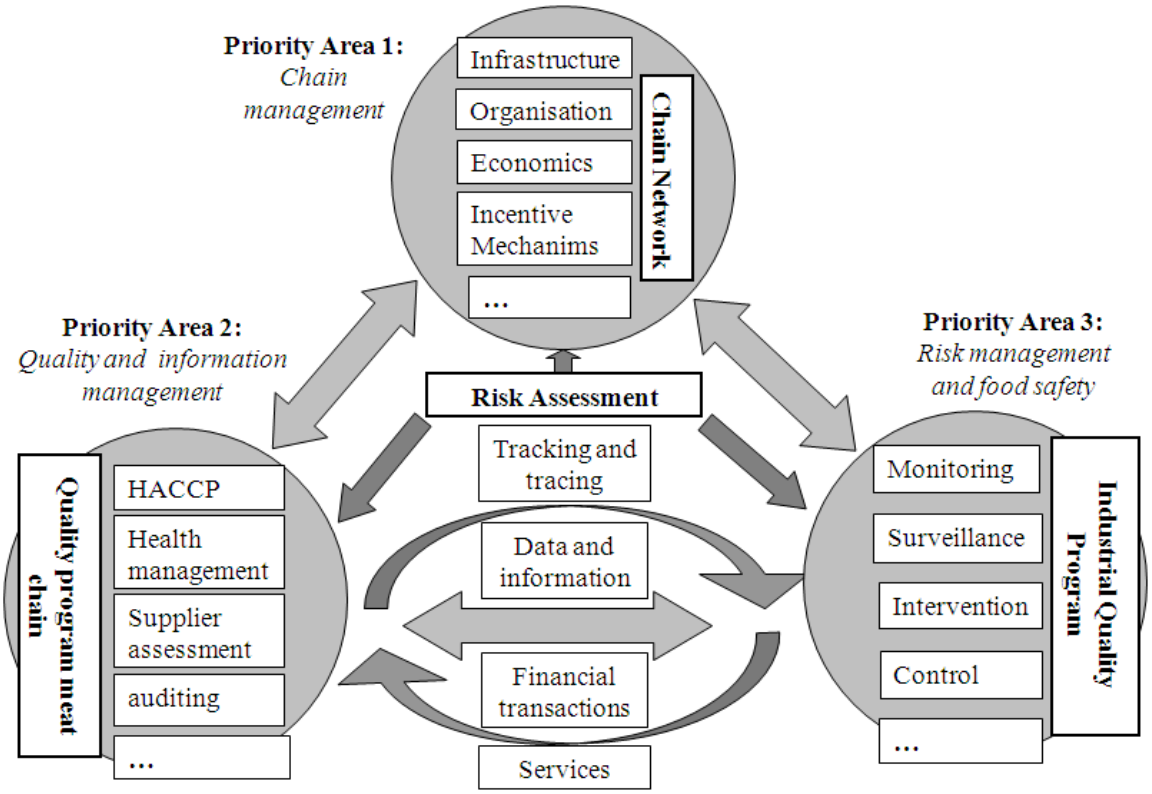

Figure 2: QUARISMA – the linkage between the priority areas

In the IAPP-programme, importance is given to collaboration between the tasks of the research. Horizontal activities bridge the cross linkage between the priority areas. By means of knowledge transfer, researchers from industry and academia will be seconded, recruited and further trained to develop their career and obtain new cognitions accompanied by

networking activities across the priority areas. The results of the research will be disseminated European-wide in several open international conferences and meetings in which external researchers will be informed and their knowledge expand.

The theoretical framework for the interdisciplinary collaboration in QUARISMA is supported by three models. These models enable the assignment of describing, comparing, predicting and instructing information to specific tasks and responsibilities in QM:

1. The **NetChain-Model** is the basis for the simultaneous consideration of horizontal and vertical connections along biological, technical and organisational determined processes.
2. In combination with the **Process-Model** according to DIN EN ISO 9000 and 22000 this approach enables the determination of concrete control and decision points, at which specific information is needed for QM at each stage of the chain.
3. The **Socio-Technical Model** of the control cycle with feed-forward control of disturbance is a frequently used description for action cycles. Information and action cycles between the execution and decision process are situated intra-corporate as well as externally. This characterises inter-organisational quality control cycles. Necessary standard values can be determined on an internal and external basis, e.g. customers, suppliers, processors, authorities, etc.

The project has six work packages with each package comprising different tasks covering the theoretical framework as shown in Figure 3

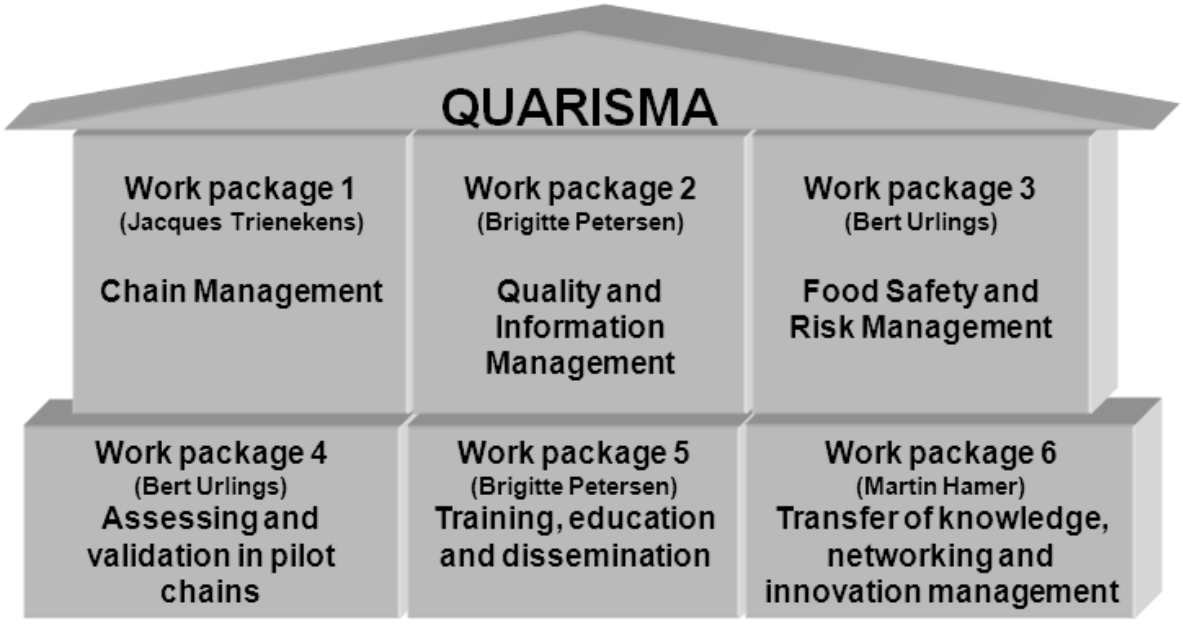

Figure 3: Overview of research activities – the „House of QUARISMA'

The novel interdisciplinary research team of QUARISMA will lead the project to achieve scientific as well as social objectives and will potentially set new trends to establish European research in QM and RM as having a world-leading role in this field with reference to the meat sector.

Current status of activities

At present, after one and a half years already two people have been recruited, one at the GIQS and one in industry. The University of Bonn has already exchanged four people to industry. Furthermore, participating organisations in industry can become affiliated with the

project even if they have not been from the beginning. In summary, the project is thriving and is making considerable progress towards achieving the pre-defined goals.

References

Brinkmann D (2009): Industry Academia Partnerships and Pathways (IAPP): Von der Idee zum Projekt – ein Erfahrungsbericht. Presentation at the Marie Curie IAPP Information Event of the EU FP7 National Contact Point / KOWI, 22.04.2009, Bonn.

Petersen B (2003): Das Qualitätssicherungswesen in Deutschland und Europa – Rahmenbedingungen und Entwicklungen. Lebensmittelqualität und Qualitätssicherungssysteme. Agrarspectrum Series, 37, 35-48.

Schulze Althoff G, Ellebrecht A, Petersen B (2005): Chain Quality Information Management – development of a reference model for quality information requirements in pork chains. In: Journal of Chain and Network Science (5) 2005, 27-38.

Trienekens, J., Petersen, B., Wognum, N. and D. Brinkmann (2009): European pork chains – Diversity and quality challenges in consumer-oriented production and distribution, Wageningen Academic Publishers, pp. 19-37, ISBN 978-90-8686-103-3.

Ackknowlegdement

The research leading to these results has received funding from the European Community's Seventh Framework Programme FP7/2007-2013 under grant agreement n° 228821.

Further information about the project and its activities will be given in the short paper and presentation of Dr. Susanne Lehnert at 22.06.2011.