Food safety as a global challenge

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Food quality and safety have become focal topics that concern every citizen in the European Union (EU) and worldwide.

Food quality could not be separated from food safety as they are interdependent.
Food quality and safety are not important only for the consumer protection, but also for the food industry, which stands to gain and maintain consumer confidence.
Food safety is currently one of the most important challenges confronting consumers, producers, and distributors. It is also an issue that is in the centre of interest of scientists and experts because it has great health, economic, and legal consequences.
Frequent dramatic food emergencies focus the attention on food safety in order to manage the risks for human health that could occur in any point of the food chain.
• Food, in general, reflects the environmental conditions under which is produced, handled, used.
• Increased environmental pollution, rapid expansion in international trade of food and in tourism sector have resulted in increased risk of higher intake of food chemical contaminants through diet and detrimental health effects.
Thus, safety of food cannot be dealt with as just a physical problem but rather as a multi-dimensional one, affected by politics, economics and social influences.
The industrialised trading regions, like the European Union has a responsibility for encouraging and enabling improved food safety by contributing state-of-art knowledge and standards.
To ensure that such information is harmonised, communication and collaboration among food safety research scientists are essential!
It must be also an object of joint research efforts in order to confront diverse issues within the area.

The EU food safety requirements were devised with the aim of having similar standards across the Community, a harmonisation meant to reduce internal trade barriers.
Contrary to the most developed countries, less developed ones share a common problem in the food sector that is little or no regulations in place regarding the EU food safety requirements, ...
... which could be attributed to delayed national implementing measures, and one of the main reasons for such situation is also lack of resources capable to follow stringent EU regulations, since ...
... the implementation of integrated, farm-to-fork food safety systems to meet today’s stringent requirements for consumer protection and trade in food commodities requires a well developed analytical capacity for contaminants and residues.
• Food analysts require analytical methods to detect and identify the nature and concentration of chemicals in all components of foodstuffs from the raw materials to the end products.
These analyses are challenging due to the complexity of the matrix compounds in food extracts, which often interfere with detection of target compounds and elements.
It could be said that the use and development of new analytical techniques in food science runs parallel with the increased consumer concern what is in their food and the safety of food they eat.
Direct interest in various aspects of food analysis, its standardization and harmonization, food safety and authenticity could be also seen in many projects funded under FP6 and FP7 programme;
...in some of them the CEFSER supporting partners, Institute of Chemical Technology from Prague, and Vrije University from Amsterdam, have been also included:

PERFOOD (227525, 2009-2012),
CONffIDENCE (211326, 2008-2012),
TRACE (6942, 2005-2009),
BioCop (6988, 2005-2010),
HEATOX (506820, 2003-2007),
Unfortunately, developing countries or those with economies in transition are frequently at least one step behind the latest development.

For instance, the relevant educational curricula in these regions have not been adapted to recent advances in food analysis.
Moreover, lack of capital investments in the analytical equipment reduces possibilities to be competitive in the research as well to perform monitoring in compliance with the stringent EU regulations on the food safety.
Assuring safety in the European food supply, which is today of particular importance and one of the major preoccupation of civil society, urges for consolidation of all our capacities and capabilities relevant for food quality and safety research.
EC recognized the existence of the transitional gaps that have occurred in the enlarged European Union and opens the REGPOT calls within FP7-CAPACITIES programme.
These REGPOT calls offer an opportunity to the less developed regions to significantly upgrade the resources, stimulating the realization of the full research potentials of the enlarged European Union and enabling them successful engagement in the main research streams.
“CEFSER” is the FP7-REGPOT-2008-1 project dedicated to the reinforcement of research potential of the Laboratory for Chemical Contaminants in Food and the Environment at the Faculty of Technology, Novi Sad, towards the establishment of a unique Western Balkan Country (WBC) Centre of Excellence in Food Safety and Emerging Risks (CEFSER) with infrastructure and activities on food safety and emerging pollutants integrated with advanced and well experienced institutions from EU.
Through postulated general objectives such as:

- capital investments in a highly sophisticated analytical instrument,
- upgrading of the existing equipments,
- reinforcement of the human resources (hiring, mobility, etc), and
- networking with advanced EU institutions,...
CEFSER integrates the Faculty of Technology within the European Research Area, contributing to upgrading of the regional capacities towards the general harmonization of R&D within the food safety research.
After the capital investments through the CEFSER project, we are ready to tackle new analytical challenges in food safety area, some of them are:

- screening of multicomponent mixture of mycotoxins and pesticides by high resolution MS,
- analysis of perfluorinated compounds belonging to the emerging contaminants,
- development of the advanced method (UHPLC-APPI-MS/MS) for analysis of PAHs in sub-ppb levels
- analysis of thermo induced contaminants like acryl amide
• All these issues are new and have never been investigated in Serbia or even wider in the WBC region.

• Hence, direct impact of the CEFSER project could be seen in upgrading of the national and regional research capabilities.
With new data and knowledge gathered, it could further contribute to:

- the international recognition of the national and regional science, and also
- to influence the harmonization of the methods and regulations over the region
Our capacities have been recognized and since the beginning of the CEFSER project:

- one IPA project and two bilateral projects have been contracted,
- the CEFSER team has been involved in two FP7-KBBE proposals,
- there have been several proposals for the joint research.
Only through increased level of collaboration and research synergies across the enlarged EU, including Candidate and Associated countries it is possible to bridge the gap in knowledge and experience in food science with the final contribution to a more competitive and safer European food supply.
Thank you for your attention!