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Challenges in food safety as part of food security: lessons learnt on food safety in a globalized world

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Abstract

Food safety should accomplish food and nutrition security. A key challenge to scale up food safety globally is to better leverage existing capacity and research working towards evidence-based decisions. At Ghent University since 2009 an annual 3-months international Intensive Training Program on Food Safety, Quality Assurance and Risk Analysis has been organized (www.itpfoodsafety.UGent.be). The trainees were asked to express their opinion on food safety concerns in their country and to select a case study to work on throughout the course. Main food safety issues had to do with bacterial pathogens, pesticide residues and mycotoxins which were challenged by lack of food safety knowledge and appropriate legislation and enforcement by government. They welcomed education and training on these topics in particular to elaborate on control measures including good hygienic practices, implementation of certified food safety management systems and setting of appropriate criteria. A number of topics are highlighted here in particular as these topics were shown to have a common ground of interest by several participants in several countries and throughout the years. These topics include among others safety of street foods, safe milk and cheese production, and risk assessment to control *Salmonella* and pathogenic *E. coli* in meat (and other foods). Although some recurring food safety issues could be identified, other topics are of particular concern in selected countries because of specific cultural appropriate eating habits. The world is changing fast. Problems change and the information stream is very intense. Leaders in food security should be aware about food safety as well, and will have to develop an attitude of continuous learning, critical thinking and be given the right tools (“know how”) to develop local solutions to address the emerging societal and environmental challenges to provide sufficient, safe, healthy, nutritious and sustainable produced food to the world’s population.

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1. Introduction

This year World Health Day 2015 focused on Food Safety and it is highlighted that food safety should accomplish food and nutrition security. Food safety assesses and encompasses all points of the food production system where food borne illness risks can be controlled. Food availability (food security) is the reliable access to a sufficient amount of food that is safe, wholesome, and nutritious. Both are essential goals that need to be met to protect and improve human health and nutrition. Access to safe and nutritious food is considered a basic individual right. Food safety is recognized as part of the enabling environment for reducing hunger and malnutrition in the 2014 Framework for Action adopted at the Second International Conference on Nutrition. Consensus has emerged that the best way to address food safety is through the supply chain in a farm-to-table approach that focuses on cost-effective prevention and risk based management.

A key challenge to scale up nutrition, public health and food security/food safety globally is to better leverage existing capacity and research working towards evidence-based decisions. Food safety deals with safeguarding the own national food supply chain from the introduction, growth or survival of hazardous microbial and chemical agents. But within a larger international context, borders are fading and surely this is the case for foodstuffs which are an important globally traded commodity. There is great divergence in the degree of organisation, infrastructure, teaching capacity across countries and food protection (food quality, food preservation, food safety) needs to be tackled globally.

2. Methodology

The experience gained from the concerns in food safety issues that were expressed by the trainees participating in the Belgian VLIR UOS funded ITP Food Safety course at Ghent University was the basis of this opinion paper. Upon their arrival in Ghent trainees were asked to express their opinion on food safety in their country and to select a case study to work on throughout the course. To facilitate a common starting point for discussion on food safety, the ITP Food Safety Trainees were provided with alphabetically ordered short lists of i) food safety issues of potential concern, ii) contextual factors affecting the safety of the food supply chain and iii) control measures for assurance of food safety as described by Van Boxtael et al.¹ Each of these lists and topics on the list were shortly introduced by a Ghent University collaborator. Next, the following questions were asked to each trainee *'Please using the shortlist rank the 5 most important i) food safety issues; ii) contextual factors; iii) control measures according to your opinion (for your country of origin) with 1 = most important, 2=second most important, etc'*. These rankings were collected from all trainees, and subsequently an overall ranking of the items based on equal weighting of the opinions of each participant was calculated. In summary, a weighting factor (WF) equal to 5, 4, 3, 2, 1 was assigned to the items that were selected for the positions 1, 2, 3, 4, 5 respectively in the top 5's. Items that did not occur in any Top 5, received a WF=0. Next, for each item, a score was calculated as the total sum of WFs. The resulting sum for each item was divided by five, which resulted in an average importance score between 0 (least important item) and 5 (most important item). In addition, a list of the case studies of food safety issues elaborated on in detail by the trainees with regard to hazard identification and food safety management or risk assessment over the years 2009-2015 was composed to look for a common ground of food safety issues of concern over the years. Participants were coming from in total 29 countries across the world including Bangladesh, Belgium, Benin, Bolivia, Brazil, Cameroon, Colombia, Cuba, Ethiopia, Ghana, India, Indonesia, Italy, Jordan, Kenya, Nepal, Nigeria, Palestine, Philippines, Rwanda, South-Africa, Sri-Lanka, Sudan, Tanzania, Thailand, Togo, Uganda, Vietnam and Zimbabwe.

3. Results, Discussion, Conclusions and Recommendations

Since several years, and with support of VLIR UOS and thus funded by the Belgian Development cooperation, an Intensive Training Program (ITP) in Food Safety, Quality Assurance and Risk Analysis has been organized at Ghent

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