Policy implications of NCCR North-South research

- Risk Assessment has great potential to improve food safety in Vietnam and similar countries. But local technical capacity and human resources for implementing must be increased. More pilot projects are needed to determine the best ways of applying RA in informal markets.

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- Additional research is needed to quantify the risks to human health from different foods and to assess how these can be managed. More evidence is needed to identify better ways of risk management and the effectiveness, costs vs. benefits, and feasibility of these approaches.

Further reading


A growing RA evidence base

In June 2013, the Vietnamese Journal of Preventive Medicine published a special edition on “Risk Assessment for Health Research in Vietnam” (http://cenpher.hsph.edu.vn/english/news/risk-assessment-health-research-vietnam). It describes how RA and improved risk communication are beginning to be applied in Vietnam. For example, RA was used to estimate how much human illness is caused by bacteria in pork, contaminated water, and pesticides used in agriculture. In addition, HSPH has published two books on RA in Vietnam – “Microbial Risk Assessment for Food Safety” (2011) and “Environmental and Occupational Risk Assessment” (2013) – and now offers a course on “Environmental and Occupational Health Risk Assessment” to students pursuing a bachelor’s or master’s degree in public health. Drawing on these publications and the growing evidence base, a manual on microbial risk assessment for food safety and related training materials were recently developed and validated for use throughout Vietnam.

Building capacity for RA in Vietnam

In Vietnam, the national Law of Food Safety (in effect since July 2011) mandates application of RA to high-risk food products intended both for domestic consumption and for export. In May 2013, the Government of Vietnam announced its support for development of a rapid detection system for food safety, and its Ministry of Agriculture and Rural Development issued a circular on using RA in food safety management. However, there is a lack of local capacity in practical application of RA. The situation is especially urgent in Vietnam’s informal markets, where most domestically produced food is bought and sold. RA is rarely applied in these settings.

One important way RA capacity is being strengthened in Vietnam is through an RA Task Force. It brings together representatives from Vietnam’s Ministry of Health, its Ministry of Agriculture and Rural Development, and researchers involved in RA and food safety from key universities and research institutes. The Task Force is developing guidelines for use of RA on behalf of food safety management in informal markets catering to local consumers. These guidelines will be used to train a wide range of decision-makers, including high-level policymakers and researchers belonging to the Risk Assessment (RA) Taskforce meet with senior members of the Vietnam Food Administration (VFA) in Hanoi.

Features case studies

Food safety in supermarkets and wet markets in Hanoi

A 2010 study in Hanoi compared traditional and modern pork value chains. Researchers found that the hazards – including parasites, bacteria, and antibiotic residues in pork – were very high and that slaughterhouses linked to supermarkets were a major contamination point. To the surprise of many stakeholders, pork sold in supermarkets was of consistently lower quality (in terms of high bacterial contamination) than that sold in wet markets, most likely because meat was contaminated at the slaughterhouse and was kept longer in supermarkets, allowing bacteria to grow despite refrigeration (Grace 2013). This study supports the argument that local, informal food markets (e.g. wet markets) can have a role in supplying safe, high quality meat.

Understanding Salmonella contamination in pig slaughterhouses

In a 2013 study of Salmonella contamination in four pig slaughterhouses in Hung Yen, samples were taken from pig carcasses, workers’ hands, cutting boards, and belly skin material. The prevalence of Salmonella on pig carcasses was found to be 35% and the most common contamination point was workers’ hands. This very high Salmonella prevalence likely presents real risks to human health. The study suggests that interventions emphasising good hygienic practices, especially hand washing, would reduce contamination risks (Sinh et al 2013). The next step is to test corresponding slaughterhouse interventions that effectively incentivise hygienic practices.

Using RA to reduce the risk of dioxin exposure in foods

RA was applied to evaluate the risks of dioxin in food to residents living near airbases in Binh Hoa and Da Nang. Data collected on people’s consumption patterns and the dioxin levels in foods revealed that residents faced high risks by eating locally produced foods. High-risk foods included freshwater fish, snails, crabs, free-range chicken, duck, pumpkin, and lotus produced near the airfields. The results of these RAs were used to develop Vietnam's first public health intervention programme to combat dioxin exposure in foods (Hanh, 2010).

Partners:

• Hanoi School of Public Health (HSPH)
• National Institute of Hygiene and Epidemiology (NIHE)
• National Institute of Nutrition (NIN)
• National Institute of Veterinary Research (NIVR)
• Ministry of Health (MOH)
• Ministry of Agriculture and Rural Development (MARD)
• Swiss Tropical and Public Health (Swiss TPH)
• International Livestock Research Institute (ILRI)
• International Food Policy Research Institute (IFPRI)
• World Health Organization (WHO)
• Food and Agriculture Organization (FAO)

Definitions

Hazards are things that have potential to cause harm. In the context of food safety, a hazard can be classified as a substance or an agent (i.e. biological: virus, bacteria, and parasites; chemical: growth promoters, antibiotics, pesticide residues; or physical) present in food that has the ability or the potential to cause an adverse health effect in consumers.

Risk is the chance that a person might be harmed if exposed to a given hazard. Risks in food safety are usually referred to as short- or long-term effects on human health.

Food safety describes activities along the value chain – during handling, preparation, and storage of food – that prevent food-borne illnesses.

Informal markets refer to unregulated economic enterprises or activities where there is no effective food safety regulation.
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Featured case studies

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Featured case studies (continued)

Household-level practices affecting food safety in Hanoi

A study in Hanoi examined how people’s household cooking and eating habits exposed them to Salmonella. Evidence of Salmonella contamination was found in 25% of the samples of pork at markets where people shopped, and people’s preparation methods risked spreading the bacteria to other foods in their household. Given the difficulty of changing the food-handling practices of millions of people, the best interventions are likely those that control Salmonella in the value chain, before it reaches consumers (Toan 2013).

Partners:

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- National Institute of Nutrition (NIN)
- National Institute of Veterinary Research (NIVR)
- Ministry of Health (MOH)
- Ministry of Agriculture and Rural Development (MARD)
- Swiss Tropical and Public Health (Swiss TPH)
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Further reading


The National Centre of Competence in Research (NCCR) North-South is a worldwide research network including six partner institutions in Switzerland and some 140 universities, research institutions, and development organisations in Africa, Asia, Latin America, and Europe. Approximatelly 350 researchers worldwide contribute to the activities of the NCCR North-South.

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