



VIETNAM FOOD SAFETY RISKS MANAGEMENT

Challenges and Opportunities

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Introduction

The World Bank Group together with donors and development partners in Vietnam received a request from the Government of Vietnam to provide advice for food safety capacity building¹. This policy note is the outcome of a continuous collaborative effort by partners, including intensive discussions with government agencies at central and local levels, visits to farms, agri-food enterprises and markets, and a two-day workshop on food safety organized in Hanoi in January 2016. This note builds on the available background material as well as on the material and background papers prepared by partners².

The objective of the policy note is to develop options and policy recommendations for the Government of Vietnam on strengthening food safety capacity. The note lays out the available information, analyzes the institutional and policy framework for food safety, discusses possible recommendations and provides an outline for actions for the next steps. It is expected that after being reviewed by

development partners, peer reviewers and experts, the policy note would be endorsed by the World Bank Group management as the basis for submitting to the Government of Vietnam. An important framework within which this analysis has been conducted is the toolkit that the WBG's Trade & Competitiveness Practice has published on Food Safety Reform in 2014³. Through its eight Fundamental Pillars, the toolkit serves as a comprehensive checklist of where to get started and how to prioritize when undertaking Food Safety reform process.

The policy note is complemented by a more in-depth analytical paper, which presents the evidence and analytical framework for the recommendations. As such, the policy note focuses on selected areas for food safety capacity building, which according to experts, team members and workshop participants, are of high priority and demand critical policy actions.

¹ Development partners: FAO, ILRI, CIRAD, ADB, Canada and France

² References are available

³ http://globalpractices.worldbank.org/trade/Knowledge%20Base/IC/Business_Environment/Food%20Safety%20Toolkit-%20Guiding%20Principles%20of%20Food%20Safety%20Reform.pdf

The background and context

The recent Vietnam Development Report⁴ of the World Bank predicts that in the next two decades the agri-food sector will continue to play the key role in Vietnam's economy and in people's livelihoods. The sector's development will largely be driven by urbanization and a growing middle class, with emerging affluent consumer segments and changes in dietary patterns. This would transform the agri-food industry from being previously commodity export oriented to becoming an industry that increasingly focuses on value addition. Improved safety in the food supply chain, in this context, will not only open up new premium markets and increase the competitiveness of Vietnam's food products, but will also protect the domestic consumer and will bring significant benefits to public health.

Food safety has been a source of major concern in recent years. Both the public and the government have been concerned about the integrity of the food supply chain and its ability to deliver safe food to people. Media reports about food safety

issues have proliferated, causing public outcry and pressuring the government to react. In response to these concerns the government reviewed its food control system. It reduced the number of ministries responsible for food safety from six to three and is redirecting its capacity for controlling food safety for exports to developing systems for greater coverage of the domestic food supply chain. However, these recent changes brought little improvement in food safety and were not enough to comprehensively address the issue. In order to build on achievements to date, there are some areas where Vietnam can learn from the available international practice, with the caveat that some of the underlying factors in Vietnam are different from those observed in other countries.

The food consumption patterns in Vietnam have changed significantly during the recent decade, and changes will continue. The most significant is the increased diversification of diets across all income groups of population. The consumption growth of meat (especially pork), milk and

eggs has been the highest compared with other countries in the region. According to the Vietnam Development Report⁵, significant growth has also occurred in the consumption of fish and of certain processed foods. In the meantime, food shopping habits still remain mostly traditional. There is a preference for fresh meat and produce, and there is more trust in traditional or wet markets than in modern supermarkets (although some studies are showing growing trust in supermarkets). The penetration of supermarkets is the lowest in Vietnam as compared with other countries in the region⁶. The strength of the agri-processing industry is also below of that of other comparators. "Supermarketization" in many countries drove out the micro and small traditional businesses but resulted in the introduction of more modern food safety practices and standards. Especially the international leading brands of supermarkets brought their corporate food safety practices, which resulted in trickle-down effects on agribusiness through improved food safety

practices and even improved profits, though also resulting in consolidation of the agri-processing industry.

Such an effect has not happened in Vietnam yet, or rather is happening but at a very slow pace. This report does not promote "supermarketization" but it notes that the development process in Vietnam is different, and therefore food safety policies may not follow the same path as those in other countries that have more established formal retail, and more strength in the agri-processing industry.

Vietnamese people tend to prefer fresh and unprocessed food, although there is growing demand for more convenience ready-to-eat and processed foods. As the urban middle class grows, the demand for processed and convenience food is likely to grow as well. Interestingly, the share of primary agriculture in Vietnam's economy increased with economic growth, in contrast to other countries where the transition to a middle income country has seen agriculture's share decrease.

⁴ World Bank. 2016. Transforming Vietnamese Agriculture: Gaining More from Less. Vietnam Development Report. Washington, D.C. World Bank.

⁵ Ibid

⁶ Ibid

The processing industry is not as robust and developed as in other countries. Most processing is based in micro or small enterprises and is local. This means that processing is spread across hundreds of thousands of firms, making it difficult if not impossible to monitor for food safety using conventional methods. This also makes it difficult to promote certification schemes or private standards that are widely used in other countries and that have been successful in building industry compliance with food safety rules in some countries with high levels of governance. Conventional certifications and standards are too expensive for micro and small producers, and although other approaches exist that are less onerous (e.g. group certification), they have not been widely used.

These unique food system features of Vietnam are coupled with similarities in food production to other countries of South East Asia. That is a production base consisting of millions of small farmers, often overusing chemicals, antibiotics and growth promoters to get higher yields and desired product characteristics, because most farmers rely on agriculture income as the main source of their livelihood.

This report is about how Vietnam can prepare for new food safety challenges and what policy measures can be adopted to ensure the safety of the food supply chain in the context of its imminent transformation within next two decades. Many policy-relevant options and recommendations

outlined below are based on the experience of countries that successfully dealt with similar food safety issues, but most importantly reflect some of the experiences of Vietnam.

Summary of available evidence on food safety hazards and risks

Main messages for public policy

- The risk of foodborne illness is real, even if it is not at crisis level. Microbial contamination is responsible for the greatest health risk, followed by risks associated with excessive chemicals and toxins.
- Nevertheless, Vietnam is not in food safety crisis in terms of public health, despite the overall public perception and media representation.
- The public are rightly concerned that the implementation of preventative controls falls well short of what should be achievable. Public policy needs to be proactively responsive to the public's concerns.
- In the absence of more comprehensive data, research findings and international experiences should help guide the public policy response but improved information needs to be developed.

There is evidence that food contamination in Vietnam is widespread, as found in numerous scientific studies. Food contamination hazards appear at all stages of the value chain. Specifically, ILRI's studies show high level of contamination with Salmonella, Escherichia coli and other contaminants. The findings in Vietnam are consistent with most surveys of food in Asia and Africa, which find that a large proportion of domestically produced food, often the majority, fails to meet basic food safety standards.

Over the recent years, there have been many research initiatives in Vietnam that analyzed food safety risks and hazards. These initiatives have been supported by various domestic and donor programs, and build a strong research community that is able to identify and estimate food safety hazards and their likely impact on public health based on modern science. Most of these initiatives are supported through various grants and programs, and hence serve as independent scientific information on the likely presence and impact of food safety hazards. Examples such as ILRI's PigRisk Project, recent risk assessment studies carried out

jointly by FAO and MARD, provide credible evidence and conclusions regarding the need to further control food safety hazards. More detailed information about the findings of these studies is provided in the accompanying Food Safety Technical Working Paper in Section 4.

Independent research surveys, such as those by ILRI⁷, based on literature reviews, as well as covering tens of thousands of food samples, found that around 10-40% of food is contaminated with microbes or parasites, which cause foodborne diseases. Unacceptable levels of pesticides, heavy metals and antibiotic residues are also commonly present. For example: salmonella was found in 30% of food (67 studies); pig tapeworm in 7% of pork (9 studies); antibiotic residues in around 30% of pork (3 studies). In the absence of comprehensive regulatory results from government sources, surveys reported in the literature are probably the most reliable way of assessing the safety of food in domestic markets.

However, these results do not mean that food with these characteristics will necessarily lead to illness. Proper washing and cooking can remove many of the dangers represented

⁷ Grace, D., Mutua, F., Ochungo, P., Kruska, R., Jones, K. E., Brierley, L., ... & Thao, N. B. (2012). Mapping of poverty and likely zoonoses hotspots.

in these figures. Good production, storage and handling practices can reduce the risks to human health.

Consumer confidence has been seriously affected by media reports about contaminated food. A nationally representative survey funded by USAID⁸, found that food safety was one of the two most pressing issues for people in Vietnam, higher than education, health care or governance. A large survey in 2010 found that respondents were pessimistic about the food safety situation in Vietnam: 43% of interviewees felt that food safety had worsened in the previous 10 years, while only 22% felt otherwise. City dwellers, high-income earners and young people were much more frequently concerned about food safety than rural dwellers and low income earners.

Despite seemingly alarming results from the research findings, there is little or no scientific evidence to estimate the likely burden of foodborne illnesses. Public data of foodborne illnesses is very limited. Food poisoning events involving concentrated groups of people often receive the most media and subsequently government attention because of their visibility but in reality are likely to represent just the

⁸ USAID. (2015). Report, National Opinion Survey 2015. Hanoi, Vietnam.

tip of the iceberg. There are from-time-to-time media reports about outbreaks of one or another food poisoning event that affected significant number of people⁹.

According to Authority figures¹⁰, during four years of reporting (2012 to 2015), the highest proportion of foodborne disease outbreaks was traced back to micro-organisms (42%), followed by natural toxins (28%) and chemicals (4%) while for 26% the causal agent remained unknown. Where a single food source was implicated, this was most commonly seafood, followed by mushrooms. Studies from countries (including USA and Europe) with much more sophisticated public health reporting systems suggest only a small proportion of foodborne diseases is ever recorded as outbreaks. Accordingly, it is difficult to extrapolate from the limited data available in Viet Nam other than to say they are likely to greatly underestimate the true incidence of foodborne disease. They are however informative in understanding some of the risk factors for food safety outbreaks¹¹.

Public policy must distinguish between food safety and consumer confidence crises. The current situation

⁹ During the mission, there was a media report about an outbreak in a factory canteen that made 650 people ill. <http://www.foodnavigator-asia.com/Policy/Food-poisoning-cases-soar-as-650-Vietnamese-workers-are-hospitalised>

in Vietnam – significant media attention on food safety and high-level government concern – demonstrates that the public are seriously concerned about the food. Public concern, if not addressed timely and effectively, may undermine Vietnamese people's trust in the government and public policy. However, the public policy must distinguish between the food safety crisis and a communication crisis. There is no food safety crisis in Vietnam in terms of public health, but public policy must be proactive in reassuring the public that food is safe and the government is doing all possible to ensure food safety.

Observations show that consumers tend to be more concerned with chemical and toxin contamination of food rather than with microbial contamination. Also, high profile events create more concern than low profile events although the latter undoubtedly cause most of the burden. There is a perception that household practices and cooking methods may reduce the impact of any possible microbial contamination. In Vietnam, households typically wash the produce and meat very carefully before consuming it. However, the most recent research data and available information indicate that microbial contamination (through

¹⁰ VVFA (Vietnam Food Authority). 2016. BÁO CÁO Kết quả công tác phòng chống ngộ độc thực phẩm giai đoạn 2011–2015.

¹¹ Nestle, M. (2010). Safe food: The politics of food safety. Univ of California Press.

bad hygiene, pollution, cross-contamination, bad practices) is likely to cause the most immediate food safety concerns and health impacts. The publicity of recent outbreaks as reported by official sources and discussions with experts suggests that the majority of outbreaks happen in factory canteens or student cafeterias. The major cause of these outbreaks is microbial contamination. Research findings around the world confirm that overall microbial risks in developing countries are hugely understated; various estimates suggest that microbial pathogens alone in food can cause 20-40% of intestinal diseases in developing or middle income countries¹². However, the public in Vietnam (as well as in other countries of East Asia) are primarily and only concerned with chemical contaminants.

As a way to reinforce the assertion that the bacterial contamination is one of the most important hazards, one can look at the findings of other enforcement agencies vis a vis food from Vietnam, noting that such exports tend

to represent the higher end of the agri-food production and processing industry. A recent analysis of reasons for rejections of agri-food product imports from Vietnam into the European Union, United States and Japan from 2002 to 2010 found that bacterial contamination was the prominent reason for all rejections, suggesting widespread weaknesses in hygiene controls, notably for fish and fishery products, but also other major agri-food product exports¹³. While these data are only for exports, they show how pervasive the bacterial contamination issues are in the food industry.

As such, the greatest short-term burden of foodborne illnesses both for public health and for the economy is likely to be caused by diarrheal disease agents, particularly bacteria, which are also responsible for the majority of deaths due to foodborne illnesses. This is consistent with the findings in the rest of the world, as documented by the recent WHO study¹⁴.

¹² Grace, Delia. "Food Safety in Low and Middle Income Countries." International journal of environmental research and public health 12.9 (2015): 10490-10507.

¹³ STDF and MARD. (2013). Using Multi Criteria Decision Analysis to Identify and Prioritize Export Related Sanitary and Phytosanitary Capacity-Building Options in Viet Nam. Tran Viet Cuong et al.

¹⁴ Havelaar, A. H., Kirk, M. D., Torgerson, P. R., Gibb, H. J., Hald, T., Lake, R. J., ... & Speybroeck, N. (2015). World Health Organization Global Estimates and Regional Comparisons of the Burden of Foodborne Disease in 2010. PLoS Med, 12(12), e1001923.

Table 1. Reasons for rejections of agri-food product imports from Vietnam into the European Union, United States and Japan from 2002 to 2010

Reason	EU	US	Japan
Adulteration/missing documentation	18	490	0
Bacterial contamination	170	1088	145
Food and/or feed additives	78	402	14
Heavy metal	61	0	0
Hygienic condition/controls	28	1174	23
Labelling	2	997	0
Mycotoxins	23	32	7
Other contaminants	101	214	16
Other	27	25	6
Packaging	4	0	2
Pesticide residues	15	19	50
Veterinary drugs residues	198	174	300

Source: STDF and MARD. (2013). *Using Multi Criteria Decision Analysis to Identify and Prioritize Export Related Sanitary and Phytosanitary Capacity-Building Options in Viet Nam*. Tran Viet Cuong et al. Page 7.

Features of Food Safety Control in Value Chains

What are the main messages for public policy?

- Improving food production and handling practices is more important than promoting large infrastructure investments, such as consolidation of slaughterhouses or wet markets.
- Testing, especially end-product testing cannot deliver food safety and efforts should be refocused towards good practices.
- Adoption of improved Food safety interventions by producers, processors and retailers should have minimal or no impact to the traditional food culture of Vietnam.

Vietnam's agriculture and food production is fragmented with very many small farmers and producers involved in food production. Average farm size is very small. Small farms are typically unable to provide enough income to farm households unless farmers employ extensive production practices. As a result most agricultural production in Vietnam is highly dependent on extensive use of chemical inputs, such as fertilizers, pesticides, veterinary drugs etc. The official controls of chemical inputs are inadequately enforced resulting in a wide availability of prohibited and low-effect chemicals in the market. In addition, given the legacy of industrial development, many industrial complexes (often polluting plants) are concentrated near agricultural lands. Such a situation creates an overall and justified concern among the population and policy makers about the safety of the food supply. There is considerable evidence that residue levels of heavy metals, pesticides and antibiotics are high in selected agricultural products that have been tested through

research projects and government programs. Consumers are also not fully confident of the safety of products even with certification marks.

The value-chains for food production in Vietnam are typically short, which is important in reducing risk. The food is typically sold through wet markets, normally fresh and often with only limited processing. Supermarkets, stores and small shops have started to increase their share in food retail, especially in urban centers such as Hanoi and Ho Chi Minh City. Most meat is slaughtered in small (rather micro) slaughtering facilities. Most basic food processing is done as well in small-scale family-owned enterprises. There is a unique street food culture. Typically, such small and micro enterprises or wet markets have hygiene and sanitation conditions rarely adequate for good practices in food production.

There still remains a need for some infrastructure improvements but the main need is for change in practices. For example, wet markets would benefit from better water supplies, drainage and waste management. Investments are also needed to upgrade street food stalls to help improve hygiene and sanitation around street food. Food producers would benefit from improved processing equipment and

facilities. But what is needed more, to promote safer food, is the implementation of better practices. Around the world, food safety is mostly achieved not through better equipment and facilities – though they are also essential – but through good production and manufacturing practices, clean and hygienic food production environments and trained staff.

Another important aspect for focusing on improved food production practices is that regulatory product-testing is not sufficient to deliver food safety. Proposals such as those to supply rapid testing kits to markets is unlikely to provide much benefit and may give a false sense of security. Testing food does nothing to make it safe and there are so many parameters to test for that no rapid testing method is able to capture them all. In a well-functioning regulatory system, there may be scope to do regular product testing to ensure that the regulatory oversight is effective and working. Relying only on end-product testing cannot guarantee that deficient products will not enter the market through other channels.

Challenges for Government Regulation and Controls

What are the main messages for public policy?

- Public concerns associated with high-profile food poisoning incidents distract attention away from the need to address a wider production, processing and handling food safety issues which are likely having a much greater economic and public health impact
- The regulatory framework in Vietnam needs to focus more on the implementation of preventative controls and practices domestically if it is to better deliver the intended regulatory and consumer expected outcomes.

Public anxiety over food safety issues is an important issue in itself. It is not simply a question of whether the public has misunderstood the situation since that level of understanding will shape their decisions as consumers. Consumer flight from a product or a sector can be economically devastating for that product or sector and the effect can be immediate and unforeseeable. A domestic “food scare” could be used by competitor countries to impose trade barriers which may take some time to dismantle. There is an argument that the economic effects of “food scares” can be a bigger problem for the economy than days lost from work due to food-borne illness. Managing a “food scare” better is also a matter of building a more productive relationship with consumers. This will allow not only a better chance of reducing future “scares” but can harness consumers as drivers of food safety, demanding better standards and better practices.

The regulatory framework in Vietnam has improved but there remain serious concerns over implementation and

delivery of the intended regulatory outcomes. Since 2010, Vietnam has modernized its regulatory framework and its administrative structures in relation to food safety but there is still significant scope for improvement particularly with respect to implementation. The government is aware of where some improvements are needed. The provincial Peoples Committee is also considering pilots in Ho Chi Minh City to test the model of a single Food Safety Agency. In addition to these legal and institutional reforms, just as with the food producers, what is needed is the application of good practices.

The operational modalities of the Ministries and agencies are not geared to delivering the intended regulatory outcomes. Performance management has been used in other countries as a way of improving the delivery of results by government bodies. It can lead to individual accountability or to budgetary accountability, with the latter being a stronger way of ensuring that the whole organization has a stake in better delivery. Inherent to better performance management is the use of independent system audit mechanisms to assess performance against agreed outputs and outcomes sought.

Further strengthening in the institutional structure would focus on the development and use of performance

management within the three Ministries in charge of food safety, in order to improve outcomes-focus delivery by these Ministries. Such process may take some time to be in place and efficient, but could be launched immediately as an incentive for Ministries to better cooperate and deliver joint results on-the-ground. Moving from outputs to outcomes is always challenging but is what is needed for government interventions to be effective.

The following table presents some of the experiences from other regulatory systems in addressing the similar challenges as in Vietnam.

Table 2. International Trends in Reform of Regulatory Delivery

	Type of Reform	Examples
1	Streamlining administrative structures	Creating a lead agency for Food Safety is the most common model and it comes in different variations. But many countries fail to integrate at levels below National, e.g. UK.
2	Coordination across inspection bodies	Coordination can be an alternative to creating a lead agency, e.g. Germany. But it is also used to direct collaboration between all major inspection bodies, e.g. Dutch Inspection Council and “Domain” system. The UK has a looser system under a special government department, the Regulatory Delivery Directorate.
3	Risk profiling of businesses	Detailed risk criteria developed for both food products and types of business and then combined with compliance record to form a risk assessment matrix to allow fairly precise calibration of risk levels presented by any company. Best examples in Netherlands and UK.
4	Risk-based planning of inspections	Inspections are targeted at High Risk businesses and even High Risk is then prioritized individually. Low Risk businesses are largely ignored. Unplanned inspections reduced through applying same risk criteria when responding to complaints. One of the best studies of problems of unplanned inspections is from Mongolia.

Source: Authors

	Type of Reform	Examples
5	Resource reduction	Risk-based targeting allows reduction in resources since only a small number of businesses need to be inspected. Also political pressure in many countries to reduce burdens on business drives reduction in inspections. Poland has shown dramatic results in reduction without losing effectiveness.
6	Performance management	Regulatory organization has clear strategic and annual objectives, with specific performance indicators linked to risk criteria. These are reflected in performance indicators for staff that drive staff behavior in line with the organization’s objectives, i.e. raising compliance levels rather than imposing penalties. The UK is particularly strong on this approach but Estonia has shown how well it can be applied in recently developed economies.
7	Providing assured advice on request	Regulator provides advice to business on which business can rely in order to ensure compliance. Can be at inspector level or at corporate level or telephone help line. Best examples in UK and Lithuania.
8	Export-led drive to raise standards and encourage compliance	Benefits of compliance seen as allowing access to new markets, especially foreign markets. Domestic inspection then becomes supportive, to help meet foreign standards. The best example is AQSIQ in China.

Source: Authors

The regulatory system is not fully risk-based in its operation. This can be seen in the planning of sampling, where the results are difficult to use as a basis for action. It can also be seen in the approach to risk classification of businesses which depends on compliance records rather than on a mixture of that and also the nature of the business, the nature of the products and processes used and the potential extent of damage that could be caused. In certain cases, sampling is done from areas that are known to be non-compliant rather than being used to confirm whether any improvements to the food control system have been effective or not. Further, the methods or approach of each organization varies and is not uniform.

Ensuring that requirements are clearly stated, practical and non-ambiguous is important if the various sectors (producers, processors, exporters, importers, and retailers) are to embrace them and effectively implement them. Each Ministry has some system of documentation and the SPS Enquiry Point maintains a consolidated system of requirements of different Ministries – however this requires updating. Many countries in the region are struggling with this aspect of transparency and risk communication which additionally would improve communication at various levels on food safety.

The concept of risk-based food controls and ability to ensure a safe food supply is highly dependent on a strong evidence basis. This requires good data through residue and contaminant monitoring and surveillance programs on a nationwide basis. Currently such programs are operational for the export sector based on needs of importing countries. Many countries especially developed economies have such programs not only for export based products but also those supplied to domestic markets. This also requires a good laboratory network in the country with accredited laboratories. Most importantly the data generated needs to be analyzed from the point of view as to what it is showing needs to be addressed from a national food control system point of view.

Recommendations Based on Global Experience

During the past five years, Vietnam's Government has made significant improvements in its food safety control policies. Food Safety legislation and institutions have been streamlined to some extent to help implement more of a risk-based food safety control system. However, the capacities for effective implementation of food safety control have not yet been brought up to the level of institutional streamlining. The Government of Vietnam is considering a formal review of its food safety policies and legislation with a view to potentially amending the laws and regulations and further streamlining the food safety control system.

Given the widespread failure to develop effective, sustainable, and scalable models of improving food safety in domestic markets, these Recommendations are strategic directions (“direction of travel”) rather than firm recommendations for actions that will deliver solutions. It will be important to institute an experimental and learning approach to changes in the food system, with frequent assessments of progress and consequent adjustments.

The recommendations are provided keeping in mind two important features:

- **Safe food should be delivered by the private sector, whether micro- or large-scale, and by all actors in value-chains from inputs suppliers and producers to processors and food distributors, through use of good practices and adapted technologies.** The public authority's mandates are to (i) provide an enabling environment so that safe food can be delivered, entailing: proper legislative and policy framework; institutions/incentives to empower the private sector to deliver safe food; promoting good practices and offering compliance support; and (ii) establish and implement a well-designed and balanced control and enforcement system to ensure that food is safe and build confidence among customers while avoiding undue interference with market functions; this includes: a network of well-trained food inspectors; proper, coordinated and science- and risk- based Food Safety Surveillance Plans; recognized laboratory networks

(public and private) providing timely and quality-assured tests; risk communication capacity and strategies etc.

- **The current food production system in Vietnam, mainly relying on a multiplicity of micro- and small scale producers, operators or businesses, make it challenging to assure the delivery of safe food in the very short term.** Consolidation of production systems to reduce reliance of the supply chain on micro-producers will facilitate the process but will take time, and is not the only option for a safety assured food system. However, that should not prevent the Government and private sector to start taking measures immediately. Therefore, these recommendations are structured around interventions that can start immediately, and those that must be envisaged with a medium to long term perspective.

Below are the recommendations

The overall recommendation is to develop a risk-based system using the principles of risk assessment, risk management and risk communication as set out by WHO/FAO.

Risk assessment is the scientific evaluation of known or potential adverse health effects resulting from human exposure to foodborne hazards. Current, credible information on food safety is a prerequisite for risk management and communication. Actions to improve risk assessment could include:

1. *Strengthen national food safety monitoring and surveillance* system in general and specifically address discrepancies between surveillance and control for export versus domestic market. As efforts in surveillance by different agencies are fragmented and insufficiently coordinated and integrated, a comprehensive and joint National Surveillance Plan should be developed, keeping in mind that foodborne diseases are preventable and prevention starts at the farm.

2. *Improve data management to fill the need for better evidence on risks, impacts, and costs of foodborne disease and the efficacy and cost benefit of interventions.* Evidence from the ministries is still limited and it is advisable to use independent available data, notably from research and academics as well as from the private sector, in order to help understand and manage risks.
3. *Create a culture of evidence-based decision making* in which decision makers seek and use evidence. This will require strong leadership and capacity building. There is also a need to establish a database system, collection of data from province/district, for the purpose of more effective and targeted surveillance planning – including investing in technologies and equipment.

Risk management is the process of selecting appropriate prevention and control options for improving food safety. It is based on risk assessment.

4. *Establish a performance management system* to set, implement and monitor delivery of Food Safety outcomes by the three Ministries. This would require jointly agreeing outcomes, plans and targets and regularly reporting on progress.

5. *Develop a “farm to fork” approach* for food safety that covers inputs, production, processing and retail. This can start with higher value “safer and trusted” products building on current initiatives (e.g. LIFSAP, VietGAP, PGS, Fresh Studio “TracePigs”, etc.), with an emphasis on providing incentives for adoption of better practices.
6. *Start with farm inputs:* Pesticide anti-microbials misuse is a key concern in Vietnam, and the legislative framework on this remains very permissive. It is recommended to start immediately developing a results-oriented, participatory and progressive plan aiming at (i) decreasing the overall use of chemical inputs in production (notably antibiotics in animal production), with targets, and (ii) removing antibiotic as growth promoters in animal feed. Innovations, such as the recently introduced replacement of antibiotics (e.g. by probiotic bacteria) could be promising approaches currently promoted by the private sector, if science-based and well documented.
7. *Improve traceability along the chain:* Traceability is an essential part of “farm to fork” approaches. Again it can start with high-value and high-risk products, e.g. vegetable, indigenous pork products. The methods, application, and awareness of all value chain actors on traceability should be adapted to context and expanded gradually. First attempts, already made by some large

or medium scale business in Ho Chi Minh City and Hanoi, should be monitored in terms of challenges, and lessons learned.

8. *Align Infrastructure upgrading with practice change:*

Research and lessons learnt from experience bring caution in assuming that provision of upgraded and modern infrastructure will necessarily reduce foodborne disease and deliver safer food. Current national policy on slaughterhouses network consolidation and use of Gates Wholesale Markets must prioritize good practices and behavior change of related actors towards hygienic practices including incentives rather than focusing on infrastructure only. In addition, ‘appropriate’, intermediate technologies (e.g. at slaughterhouse) should be also considered, as most expensive best practices will be more difficult to maintain.

9. *Strong consumer preference for fresh animal source food:*

Given that preference and that most of consumers do not store purchased food for long periods, focus should be placed on identifying technological solutions and management procedures to enable quick and efficient tests of fresh products, promoting business models with lean value chains to deliver fresh products within

shorted time and awareness raising on end-consumers and producer groups.

10. *Training efforts:* Training of actors, e.g. farmers, on good practices and food safety is recommended but noting that evidence has shown this to be most useful when there are clear incentives for changing practices.

11. *In the long term, the progressive consolidation of production systems* to reduce reliance of the supply chain on micro-producers could facilitate all interventions listed above. At the same time, consolidation can also multiply the hazards and spread illness more effectively, and hence requires more careful and effective monitoring than the traditional sector. The current efforts undertaken by the Government of Vietnam to promote cooperatives, and build their capacity goes in the right direction. However, there are many roads to food safety and innovative approaches based on upgrading value chains, empowering small holders and small scale retailers, and farmers markets should also be considered.

12. *Supplement end-product testing with a focus on process quality:* End-product testing is important to ensure consumer confidence but alone will not deliver

safe food. Efforts should be refocused towards (i) promoting good practices and creating incentives to sustain them, (ii) testing at different points of the product chain based on risk-based approaches; and (iii) end-products testing only used cautiously and ultimately to check if the food safety system is reliable and integrated into the proper food safety National Surveillance Plan mentioned above. At the same time, hazard testing of food is an important part of building and maintaining consumer trust and providing incentives to the private sector.

13. *Develop risk -targeted recommendations:* Performance improvement plans should be developed for major agri-food sectors taking into account their characteristics and risks.

a. The large scale private sector has significant experience in meeting food safety criteria through ‘farm to fork’ approaches. Efforts should be made to leverage the potential of large scale national and foreign companies to contribute to attaining food safety. This may entail reconsidering the current legal framework (through Circulars) limiting foreign companies to link directly with producers. However, careful monitoring is required to ensure

the benefits of this do not exceed the costs, including jeopardizing employment and food security benefits of the small-scale private sector.

b. Trade and export: Vietnam has been very successful in exporting food products. Expanding its export portfolio to include more high quality, branded products alongside the mainly lower value and undifferentiated products which currently dominate exports could increase foreign earnings and decrease the risk inherent in a narrow portfolio. This needs to be aligned with not only effective food safety systems but with visibly safe systems that start to build more international confidence in Vietnamese food products.

c. Address the informal sector context: Seek to upgrade rather than replace the informal food sector. Consider other models e.g. the farmer’s market approach rather than the supermarket approach and pilot these. Some approaches may be better suited to large scale farms but given the predominance of small producers and the importance to livelihoods and nutrition in Vietnam, it is also important to develop “light” approaches suited to small farmers and processors.

In particular approaches that are based on working with the existing situation and gradually improving it, have shown success. Continue to develop interventions but place more emphasis on understanding what works and what doesn't such as develop lighter approaches to GAP which may have greater uptake.

Risk communication is the interactive exchange of information and opinions among risk assessors, risk managers, consumers, industry, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions. Actions to improve risk communication include.

14. Improve risk communication: To address public concerns over food safety and the problem that risk perception is often not well aligned with reality there is an imminent need to educate the public and decision makers not only on risks but on the psychology of risk perception which means they are often worrying about the wrong thing. This should include that messages from the “government” related to food safety risks

have to be consistent based on genuine collaboration and coordination. To support this the government needs to develop a communication strategy to build consumer trust in government advice on food issues. While this requires a long term change, in the short term, government messaging in a food crisis should avoid strengthening negative perceptions. As already mentioned above there is a need for good evidence on which to base future communications in order to be trustworthy. The communications strategy should link with an economic strategy for the role of consumers in strengthening markets (instead of weakening them). Consumer education and awareness also needs to be imparted so that they are aware of food safety practices at the consumer end but also better understand common risk.

15. The communication strategy's development will require a mix of international expertise and local knowledge about the Vietnamese context. It should have the following key features:

a. It should use means, instruments and channels adapted to the targeted beneficiaries and that

are mostly country-specific. For instance, in Vietnam, the role of social media and web-based communication is fast growing and therefore may be a good medium to use (i.e. the MoH website has specific pages on Food Safety, FAQ sections, use of Facebook and other social media, etc.).

b. It should cover, and set the framework for, the three following aspects: (i) day-to-day communication aimed at rebuilding enough trust with consumers to be able to guide their buying decisions in positive ways (see Chapter 5.6 for more details and examples); (ii) guide reactions and responses for regular food safety criticisms/issues that are sometimes biased and not necessarily documented and/or backed with evidence, to re-establish the truth; and (iii) crisis communication when legitimate food safety issues arise that does not hide facts, nor defend those responsible for the incident, but highlight the actions being taken by the Government and other stakeholders, including all the efforts undertaken to mitigate the event's impacts (including allaying the public concerns).

c. It should increase the Government and other stakeholders' preparedness with pre-designed protocols and procedures that will increase responsiveness, and ensure that they are country-specific and adaptable to the Vietnamese context.

16. Use successful examples to motivate change: Vietnam food exports are rapidly growing as the result of uptake of general modern processing. These follow GMP, HACCP, ISO and other standard processes. Despite existing challenges for some commodities in meeting international standards there are also successful examples (e.g. 95% compliance for prawns exported to Australia). Over time, compliance has improved. Efforts should be made to replicate these also domestically. The recent decision to give authority to NAFIQAD to scale up its residue monitoring system to pork and poultry value chains is a good first step.

Optimising risk assessment, risk management and risk communication can be facilitated by building capacity and improving co-ordination between actors. This may be facilitated by the following actions:

17. *Build capacity in risk-based approaches* including risk assessment, risk profiling and risk categorization to ensure that limited resources are used most effectively for monitoring and control of foodborne disease. The capacity in risk assessment is spread across universities, research institutes, ministries (MOH, MARD, MONRE), CODEX. Training has been carried out with international assistance. However, more focus must be put on systematic application of a risk-based approach to food safety in which the private sector should take a leading role – while the Government keeps its core function of regulating and enforcing the legal framework given the insufficient capacity, resources and enabling environment for successful application.

18. *Institutional re-arrangement*: Although undertaking a major reform of the legal and regulatory framework is not considered to be an urgent priority, it is recommended to continue to identify mechanisms by which to enhance implementation arrangements and overall coordination to ensure greater food

safety outcomes. In light of the decision by HCMC municipality to move forward with piloting a “Board” constituted by some fulltime staff from DOH, DARD, DOIT, among others, and that reports to the Chairman of the People’s Committee and works as “coordinator” for food safety in the city, it would be important to establish a strong monitoring and evaluation system of this pilot. It will be crucial to learn from this experience to assess the pros, cons, and unexpected bottlenecks and analyse its suitability and replicability in the Vietnamese context. Indeed, as demonstrated in the Module 4 of the WBG Food Safety Toolkit¹⁵ there is no “perfect” institutional structure and the decision to go for single versus multiple agencies (both having several “sub-models”) will notably depend on (i) capacities of agencies (level of expertise, number of staff, equipment), (ii) constitutional organization of the country, (iii) level of decentralization, (iv) number of premises to be inspected, and (v) the level of development of the food safety system overall.

¹⁵ <https://openknowledge.worldbank.org/bitstream/handle/10986/25204/911840WP0Box380od0Safety0Toolkit0IC.pdf?sequence=1&isAllowed=y>

19. *Improve networking, consensus building and consistency* among institutions, relevant authorities and labs, in particular when attached to different Ministries, as well as strengthening the sampling capacity of lab personnel. Build capacity in diagnostics, and laboratory quality assurance, harmonization of standards and approaches among food testing labs and surveillance system (national and regional).

20. *Develop inter-connected food safety strategy and SPS action plans*: Begin a phased process by which to facilitate and ensure that the Food Safety Strategy and the SPS National Action Plan are closely coordinated and aligned. Given that the coordinating ministries are different, these two strategic documents must be written / updated synergistically to ensure that the proposed objectives, results and interventions are well aligned and complementary.

21. *Strengthen the implementation of food safety* regulations and give more responsibility to food producers and retailers. It is important to move from a system where

government has the major responsibility for food safety to a system where the private sector is empowered to take greater responsibility.



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