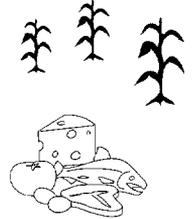




# Agriculture Technology Notes



Rural Development Department (RDV)



The World Bank

## Food Safety and Developing Countries

### The safety of the food supply has taken on a new urgency in the global marketplace

For developing countries, investment in food safety institutions and their capacity can play an important role in improving living standards through advances in domestic public health, agricultural production, and export markets. Investment is needed to establish regulatory systems and technology, build institutions, and train staff in food safety as well as in international negotiations.

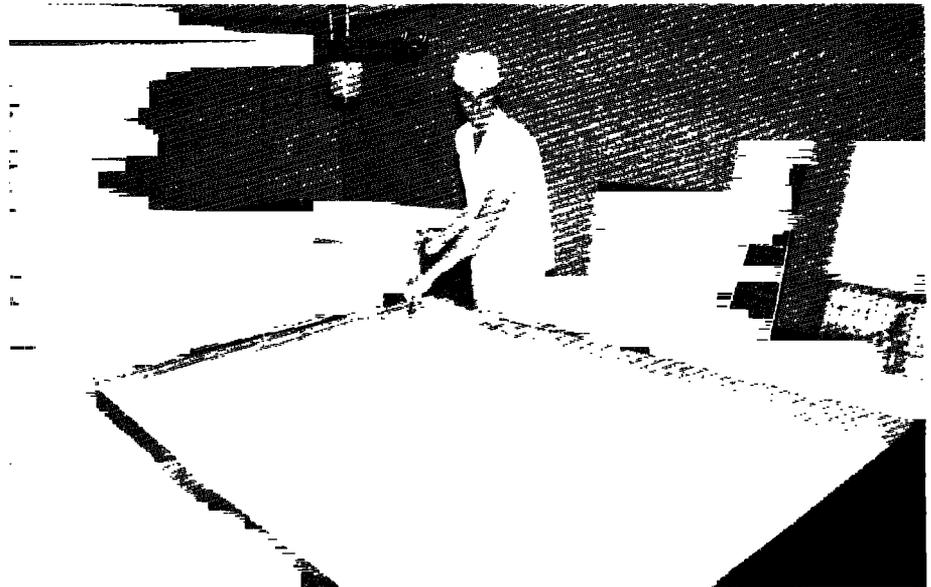
Approaches should facilitate the activity of the private sector and consider regional cooperation to combine resources.

This Note provides background and basic principles about how World Bank lending for food safety can help client countries build the effectiveness and credibility of their food safety systems.

### Food Safety at Home and for Trade

Food safety is attracting increased attention, not only because of its implications for domestic public health, but also in meeting the continuing challenge of international market access and competitiveness (Box 1).

On the domestic side, food-related diseases are a major source of human and economic losses. Diarrheal diseases affect 1.5 billion children under age five (1 billion = 1,000 million). As a result, 3 million of them die annually, and 70 percent of these deaths are caused by illnesses from contaminated food (WHO, 1999). Traditional food practices are changing, especially with increased urbanization and travel. Increased affluence leads to the consumption of more animal and other perishable products and wider distribution of foods to more distant markets. Food safety



Yosef Hadar/World Bank

*Setting and maintaining adequate and appropriate sanitary standards is essential for both domestic and export markets. A dairy worker prepared milk for processing in this Bank-sponsored project in Brazil.*

problems are becoming more complex and difficult to isolate or control, and new pathogens or antibiotic resistance to existing pathogens continue to emerge. Moreover, food safety is important to promote exports.

Domestic demand for food is often not enough to spur robust rural economic

growth, and the additional impetus of exports is required. More markets are opening up as world consumers increasingly enjoy imported foods for year-round freshness and variety.

With such global distribution, consumers and regulators are demanding strict safety standards to guarantee that no health

hazards are transmitted across borders. Food safety has emerged as one of the most prominent sources of conflict in international agricultural trade. Small and developing countries face constant challenges to assure continued international market access, and are faced with (i) stricter quality and safety standards, both official and private; (ii) increased requirements for traceability of products and ingredients, and the associated product liability; and (iii) market trends where quality and safety are increasingly central to competitiveness.

Poor countries lack the human and infrastructure capacity to face these challenges, and as a result the food

production and processing sectors are penalized, and their exports face discrimination in international markets.

Despite some progress in increasing the volume and variety of agricultural exports and imports, developing countries, particularly in Africa, have not shared proportionally in expanded agricultural trade. The rejection rate for their products based on standards is disproportionately high. According to data from the U.S. Food and Drug Administration, the highest number of detentions and rejections for food safety concerns is for products from developing countries. The most frequent violations are contamination by insects, followed by microbial contamination and excessive levels of pesticide residues.

Finally, these countries have not played a significant role in the World Trade Organization (WTO) negotiations or in the discussions with international food safety organizations about international trade and standards.

### **Box 1.**

#### **What is food safety?**

Food safety hazards include foodborne microbial pathogens that occur naturally in the environment and that may contaminate food from improper handling (e.g., salmonella, E. coli, listeria), animal diseases, parasites, mycotoxins, antibiotic or pesticide residues, and adulterants (dirt, glass, or heavy metals). Food safety also encompasses agricultural protection from insect pests and diseases of crops or livestock. The commercialization of biotechnology products is also raising questions for regulators who must be concerned with consumer sentiment.

The modern approach to food safety is to rely on prevention at every stage of the food chain from farm to table. This new doctrine is the foundation of the Hazard Analysis and Critical Control Point (HACCP) system, the state-of-the-art approach to food safety that has already been adopted in the EU, USA, Australia, New Zealand, and Canada, and is being evaluated for adoption in many other countries.

## **Growth in Agricultural Trade and Food Safety**

International trade in food has increased by some 400 percent since 1989, and an increasing variety of products has evolved. The fastest rate of growth in trade has occurred among relatively high-value perishable products including fresh or minimally processed fruits, vegetables, meats, and fish. This product perishability, combined with the demand for year-round availability and the involvement of many new players in the international food trade arena, has raised the stakes and challenges of food safety.

International agreements have also brought food safety to the fore. The Uruguay Round concluded in 1994 brought agriculture into the international trade liberalization talks. This included the Agreement on the Application of Sanitary and Phytosanitary Measures (Box 2), which brought the beginnings of order and discipline to food safety standards.

### **Box 2. SPS Agreement of 1994**

The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) covers both food safety regulations and agricultural standards for animal and plant health. It recognizes that member governments have the sovereign right to protect their citizens, but that measures should be applied only to the extent necessary and should not arbitrarily or unjustifiably discriminate against other WTO countries where identical or similar conditions prevail.

In order to harmonize sanitary and phytosanitary measures as widely as possible, WTO members are encouraged to base their measures on international standards, guidelines, and recommendations where they exist. The reference institutions for such standards are the Codex Alimentarius, the International Plant Protection Convention (IPPC), and the Office International des Epizooties (OIE).

However, members may maintain or introduce measures that result in higher standards if there is sound, demonstrable scientific justification or an appropriate risk assessment. Members are to accept the sanitary and phytosanitary measures of others as equivalent if the exporting country demonstrates to the importing country that its measures also achieve the importing country's appropriate level of health protection. The agreement includes provisions for control, inspection, and approval procedures.

One of the most forward thinking of the provisions is the concept of recognizing insect pest- or disease-free zones within national borders. Finally, a member country's regime must be published and thus transparent, and all changes must be notified in writing to the WTO.

Whether food safety standards are used by countries to protect their own producers against foreign competition or whether they legitimately protect countries from unwelcome insect pests, diseases, or contaminants, such standards often prevent trade.

The Agreement would reduce SPS barriers to trade and expose countries when they use these measures for protection because it requires member countries to demonstrate the scientific basis of their standards.

Developing countries were given a longer deadline to the year 2000, but compliance with the Agreement is proving costly and difficult.

### The World Bank's Role in International Food Safety

Food safety is a relatively new area for World Bank involvement. To date, there are 66 Bank projects with any food safety component in the ESSD core database, mainly in the form of agricultural projects with animal and plant health components. In designing food safety investment programs for World Bank financing, there are some critical issues that must first be discussed.

**Private and public sector roles and partnerships.** In principle, protection of food safety belongs in the public domain, but there are externalities (control of diseases by one farmer reduces the disease risk for the rest) and moral hazards (hygienic qualities are not easily detectable). On the other hand, introduction of quality grades for food products, especially if linked to brand name development, provides benefits that can be captured by the individual processor, and is therefore a private good. Infant industry arguments might, in some instances, be necessary for the public sector to have a role in the introduction of grades and standards.

However, in both food safety and quality, experience from export promotion projects indicates that where the capacity exists, the best practice is to rely on private certification and private investments under the supervision of the state. The cooperation of public health officials and agricultural

### Box 3. Possible project components for food safety

#### Export focused

- Establishing disease-free zones
- Developing laboratory capacity for residue testing: microbial counts, etc.
- Chain management ("from farm to the table") regulation and training
- Strengthening capacity for food inspection and certification
- HACCP training
- Systems for product traceability
- Market information about import standards in export markets
- Training in appropriate use of pesticides and veterinary pharmaceuticals

#### Domestic market focused

- Basic investments in water and sanitation
- Hygiene training for street food vendors
- Hygiene practices for wholesale marketplaces
- Provision of disease-free seed and seedlings
- Legal framework for seed inspection and certification
- Plant and animal quarantine infrastructure
- Eradication of specific plant pests (e.g., Medfly, locusts)
- Vaccination programs against livestock diseases

quarantine bureaus with domestic private companies of all sizes, as well as those foreign companies investing in food and agriculture, has proven to be sustainable. This participation of the private sector in government improves government responsiveness and accountability.

**Level of investment.** 'Modern' food safety measures are costly, and the returns in terms of increased exports and improved domestic health are unsure. Markets (export or domestic), prevailing food preparation practices, and consumer demand and needs should therefore define the level of investment, not the misplaced desire for 'modern' European or North American style regulations. Moreover, the cost of participating in the many regulation-setting events of international bodies is high. Detailed need and risk assessments should therefore precede any investment, regulatory reform, or participation in international agreements.

**Domestic vs. export.** Risk assessments and economic analyses are a pre-condition for decisions in this area. Cost-benefit analysis in food safety is straightforward

for export markets, where the value of additional exports through improved market access can be compared to the cost of investments to meet the standards for that market. For domestic food safety investments, cost-of-illness estimates have been used, but they are more difficult to assess (Unnevehr and Hirschhorn, 2000).

### Future Food Safety Investments

On the basis of these priority considerations, investment priorities can be identified. Clearly, needs and capacity vary greatly with the level of development of each country. Types of projects (Box 3) to support the public sector can include:

**Capital investments** may include laboratories and quarantine stations appropriate to the level of development and proposed export markets. In the lowest income countries, water and sanitation, basic health care, and child nutrition are likely to have highest priority.

**Institution and capacity building** may establish hygienic standards or inspection and quarantine procedures at

a level appropriate to the market and economic development of the country. Unnecessarily stringent standards may unduly favor large producers and crowd small farmers out of the best markets. As many stakeholders as possible should benefit — farmers, food processors and vendors, agribusinesses, transporters, export companies, regulatory agencies, livestock and food products companies, public health authorities, and consumers.

Sustainability is a key issue — how much of the continuing costs of food safety interventions will be borne by the government in the case of domestic health and by private sector companies or their associations for products developed for the export market. Food safety requires an overall system of guarantees from farm to table.

More than just laboratories, a legal framework is required for regulation, and

there is a requirement for institutions to involve stakeholders in the system. Public/private cooperation should result in the formation of interest groups by the various stakeholders, possibly on a regional, national, or local basis. Such associations will engender improved responsiveness by regulators to implement systems that will facilitate production and trade. The regulators should ensure equity without compromising impartiality.

**Human capacity building** can provide public support services for private producers of agricultural or processed products through market information, training government officials and private entrepreneurs in trade issues, and in particular by increasing their participation, negotiating skills, and capacity in official international rulemaking and negotiations. In this context, regional

approaches should be promoted for small countries to cooperate in international negotiations, as well as in laboratory capacity, writing rules, certification systems, setting up pest-free zones, port inspection facilities, etc. This regional approach would save money and time and enhance their negotiating clout when international standards are set by the OIE, IPPC, and Codex. Most of all, while not mandatory under the SPS Agreement, harmonizing standards across countries of a region would facilitate both imports and exports.

In designing and implementing new projects, the Bank can draw upon other institutions for expertise in food safety, including FAO and WHO, as well as on bilateral assistance from the major industrial country importers, and on private sector companies and organizations.

## Further Information

- Australia Food Safety Campaign — <http://www.safefood.net.au/index.cfm>  
Canadian Food Inspection Agency — <http://www.agr.ca/inspece.html>  
Codex Alimentarius — <http://www.fao.org/WAICENT/FAOINFO/ECONOMIC/ESN/codex/default.htm>  
Food & Agricultural Organization (FAO) — <http://www.fao.org>  
France: AFSSA (Agence française de sécurité sanitaire des aliments) — <http://www.afssa.fr/>  
International Organization of Epizootics (animal health) (OIE) — [http://www.oie.int/A\\_html.htm](http://www.oie.int/A_html.htm)  
International Plant Protection Convention (IPPC) — <http://www.fao.org/ag/agp/agpp/PQ/Default.htm>  
International Standards Organization — <http://www.iso.ch/>  
National Food Processors Association (USA) — <http://www.nfpa-food.org>  
United Kingdom: The Royal Institute of Public Health & Hygiene — <http://www.riphh.org.uk/index.html>  
USDA Animal Plant Health Inspection Service (APHIS) — <http://www.aphis.usda.gov/>  
U.S. Food & Drug Administration (FDA) — <http://www.fda.gov/>  
World Bank Animal Resource Thematic Group — <http://essd.worldbank.org/rdv/rdvweb.nsf/animal/>  
World Health Organization — <http://www.who.org>  
World Trade Organization — <http://www.wto.org/wto/goods/agric.htm>

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