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MOLDOVA
MANAGING FOOD SAFETY AND AGRICULTURAL HEALTH: AN ACTION PLAN

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ACRONYMS AND ABBREVIATIONS

BMB	Bone meal and blood
BSE	Bovine spongiform encephalopathy
CAC	CODEX Alimentarius Commission
CIS	Commonwealth of Independent States
CODEX	CODEX Alimentarius (standard-setting body for food safety)
CPM	Center for Preventive Medicine
DDT	Dichlorodiphenyltrichloroethane
EBRD	European Bank for Reconstruction and Development
EPPO	European and Mediterranean Plant Protection Organization
EUREPGAP	Euro-Retailer Produce Working Group + good agricultural practices
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Statistical Database
FDI	Foreign direct investment
FMD	Foot and mouth disease
FSU	Former Soviet Union
GAP	Good agricultural practice
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GMO	Genetically modified organisms
GMP	Good manufacturing practices
GOST	System of standards used in the former Soviet Union
GPAI	Global Program for Avian Influenza
Ha	Hectare(s)
HACCP	Hazard analysis and critical control point
Hg/Ha	Hectogram per hectare
ICT	Information and communications technology
IFC	International Finance Corporation
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ISPM	International Standard for Phytosanitary Measures
MAFI	Ministry of Agriculture and Food Industry
MET	Ministry of Economy and Trade
MRA	Mutual recognition agreement
NGO	Nongovernmental organization
NSS	National Statistics Service
OECD	Organization for Economic Co-operation and Development
OIE	*Office International des Epizooties* or World Organization for Animal Health
PHARE	Poland and Hungary: Assistance for Restructuring their Economies (EU)
POP	Persistent Organic Pollutants
SANIPED	State Sanitary and Epidemiological Service
SanPiNs	Sanitary norms and hygienic rules
SAPARD	Special Accession Program for Agriculture and Rural Development (EU)
SPS	Sanitary and phytosanitary
TACIS	Technical Aid to the Commonwealth of Independent States (EU)
USAID	US Agency for International Development
WHO	World Health Organization

FOREWORD

Growing demand for better quality and safety in food products has posed great challenges to the agriculture sector of the Republic of Moldova because it is only beginning to put in place legislative and institutional infrastructures to manage food safety and agricultural health in accordance with the WTO Agreement on Sanitary and Phytosanitaty (SPS) Measures. Improved SPS capacity will help Moldova's agricultural producers and processors comply with tightening requirements and obtain access to higher-priced market segments (especially in the European Union), as well as improve domestic food safety and animal and plant health, changes that will, in turn, promote the growth of the agriculture sector and reduce poverty.

This SPS action plan has its origin in the preparation of a policy note by the World Bank to assist the Government of Moldova in improving the functioning of agricultural markets.[1] The key messages of this action plan have been highlighted in the policy note, but the scope and complexity of the SPS issues as well as their critical importance to the competitiveness of Moldova's agro-food sector warranted more systematic study and strategic planning. Hence this action plan was prepared to provide information about existing gaps in Moldova's SPS management capacity and to recommend actions to address those gaps. The actions recommended are intended to bring about optimal benefits from participation in international trade while better protecting human and agricultural health in Moldova.

To develop this plan, an initial mission visited Moldova in early 2005 and conducted a comprehensive review and assessment of the country's sanitary and phytosanitary system. A second mission took place in September-October 2005. The team consulted with various government agencies, parties in the private sector, and a number of donor agencies working in Moldova and gathered additional information on food safety and SPS issues. Based on the findings of the missions and additional research conducted by consultants, a draft report was prepared in late 2005. It reviewed and analyzed government policies and institutional arrangements concerning food safety and agricultural health as well as existing technical capacities in SPS management in both the private and the public sector. As a starting point for the development of a strategic action plan for SPS management, it included priorities for public- and private-sector investment. In December 2005, the draft Action Plan was presented at a stakeholder workshop in Moldova attended by representatives of the various ministries, the private sector, and donor and international agencies, after which it was revised to incorporate their feedback. The main findings and recommendations were also shared with participants of a workshop on Moldova's agriculture policy held in June 2006.

This plan is a product of close cooperation among the Government of Moldova, local institutions, and international donor organizations. In practical terms, it provides the Moldova Republic with a strategy for capacity building to manage SPS requirements. The plan and its recommendations may be used as a basis for policymaking, priority-setting, regulatory and institutional reforms, and project investment. This document may also be used by donor agencies seeking ways to help fill gaps in capacity through technical assistance.

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[1] *Moldova Agricultural Policy Notes: Agricultural Markets.* Available at http://siteresources.worldbank.org /INTMOLDOVA/Resources/markets.pdf

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EXECUTIVE SUMMARY

Background

The direct objective of this action plan is to provide the Government of Moldova, donors, and international organizations a comprehensive framework for the analysis, design, and implementation of capacity-building efforts in the area of food safety and sanitary and phytosanitary (SPS) measures. The ultimate objective of improving food safety and SPS management is to enable people in Moldova to participate fully in and to reap the benefits of international trade while better protecting human health and strategically strengthening measures to protect health of livestock and crops. A food safety and agricultural health[2] management system based on WTO principles and good practice for market economies will improve Moldova's competitiveness and allow its agricultural sector to diversify into more demanding, premium-price market segments.

Agriculture is Moldova's most important economic sector. Despite sluggish growth in recent years as compared with other sectors, primary agriculture still contributes over 20 percent of total GDP (Table 1). If agro-processing is included, agriculture and the agro-food industry account for more than one-third of the national economy. Agriculture is also the largest economic sector in terms of employment, with over 40 percent of the working population.[3] More importantly, agriculture and agro-processing dominate Moldova's exports: in the last five years food and agricultural products have accounted for over half of total export.

Table 1: Economic growth and agriculture's contribution to GDP, 1997 – 2005

	1997	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
GDP annual growth, %	1.6	-6.5	-3.4	2.1	6.1	7.8	6.6	7.3	7.0
Agriculture value-added, annual growth, %	12.1	-6.2	-3.9	2.3	4.3	3.7	-10.3	13.7	3.2
Agriculture value-added, % of GDP	30.2	31.8	27.9	29.0	26.0	24.1	21.5	21.3	21.3

Source: Development Data Platform, the World Bank. Last accessed May 2006.

Moldova has been a member of WTO since 2001, but it has not yet fully benefited from participation in international trade. This is particularly true for the agriculture and agro-processing sectors. The main reason is that Moldova's transition from a centrally planned economy to a

[2] *Food safety* deals mainly with microbial or chemical contamination, levels of natural toxins, zoonotic diseases, food additives, allergens, the indirect addition of residues of chemical substances (for example, pesticides, heavy metals, antibiotics, hormones, and other drug or animal-feed additives), and decomposition of the product. These factors affect both domestic and global market access. *Agricultural health* deals mainly with the protection of the importing country from the introduction of plant pests and animal diseases. Agricultural health standards include lists of pests, defined under the aegis of the International Plant Protection Convention (IPPC), and lists of contagious diseases, as defined by the World Organization for Animal Health (OIE), affecting international trade.

[3] This includes employment in primary agriculture, hunting and forestry, and fishing. *Statistical Yearbook of Moldova 2005.*

market economy is not yet complete, and an issue of particular importance during this transition is the effectiveness of its SPS system. Much of Moldova's legal, regulatory, and institutional framework for food safety and SPS remains tied to the GOST[4] standards of the former Soviet Union. Moldovan public services still use these standards as their basic framework for monitoring, surveillance, and inspection. Actions are being taken to shift from a GOST-based system to one based on international standards appropriate to a market economy and more effective in protecting human and agricultural health.

Moldova and many other small, low-income countries have difficulties meeting international requirements for market access because of resource constraints. Transition economies face the additional challenge of reforming their systems while struggling to reorient and rebuild their collapsed primary production and manufacturing sectors to meet the demands of rapidly evolving domestic and foreign markets. While these countries make great efforts to address these challenges, external assistance by donors and international institutions could facilitate the transition by enhancing the sharing of experiences as well as providing the funds needed for various reform and capacity-building activities.

This action plan is based on analysis of information on human and agricultural health, performance of the agro-food sector, and the capacities of Government and private sector entities to manage food safety and agricultural health. This action plan cross-cuts many professional fields – legal, enforcement, scientific disciplines, trade, commerce, diplomacy, and others – and involves many stakeholders. Therefore, many interviews and several rounds of stakeholder consultation were held during the preparation of this action plan to take into account the full range of perspectives.[5] The analysis also aims to offer good practice recommendations based on experiences and basic principles from other countries (see Box 1).

Box 1: Basic trends in design and management of food safety and agricultural health

The approach to the management of food safety and agricultural health is changing in many countries. Two forces drive these changes: the WTO SPS agreement, which brings new discipline to regulatory authorities and requires international harmonization and transparency, and the recent series of food scandals (dioxin, pesticides, salmonella, BSE, hepatitis, and so on) and food scares that have led to greater public awareness of food safety issues. As a result, consumers demand their nations' food safety management systems provide better safeguards and more transparency. In response, both politicians and private enterprises have been changing their systems. These changes include the following:

a. The traditionally fragmented, decentralized state human, animal, and plant health systems are making way for a more holistic approach to the management and functioning of an integrated system concerned with both food safety and agricultural health;

b. A traditionally inward-looking style of public management has fallen under pressure to provide more accountability and transparency, to use science-based measures, and to reduce conflicts of interest within the system by separating institutional responsibilities for policy setting, implementation, and monitoring;

c. A policy of dominant reliance on controls and inspections principally of end products has shifted to a more balanced system of preventive measures, undertaken by the private sector, based on the use of quality and safety management standards throughout the supply chain;

d. The former orientation toward the interests of state regulatory services has given way to a more balanced perspective that considers the impact of the total regulatory system and of individual measures on the cost of doing business and competitiveness;

[4] GOST is an acronym derived from the phrase gosudarstvennyy standart (state standard).

[5] See Appendix 9 for a list of people interviewed or consulted during the preparation of this action plan.

e. Priority-setting based on the power of involved bureaucracies has been reduced, and setting policies and investment priorities based on risk assessment and cost-benefit analyses has increased;

f. Public and private sector requirements are increasing in scope and intensity. These changes are most prominent in industrial countries, but they are gradually being adopted in developing and transition economies. These changes incur costs, however, as well as creating benefits and developing and transition economies often find it difficult to mobilize the investments needed to make them.

Source: These materials derive from information gathered for and presented in this report.

Market Opportunities and Challenges for Moldovan Agriculture

Reform measures undertaken in the late 1990s have resulted in readjustment and some recovery of growth in Moldova's food and agriculture sector and increased integration with the international economy. Products with proven export potential so far are wine and spirits, fruit, vegetables, and nuts. Further opportunities may come from fish, dairy products, and some meat products, but signs of the potential for these products are weaker. Moldova heavily relies on the Commonwealth of Independent States (CIS) markets for its export: CIS countries buy roughly 75 percent of Moldova's export of food and agricultural products. Exports to the European Union and other industrial countries are small because exporters have major difficulties in meeting food quality and safety requirements and lack competitiveness. As countries in Central and Eastern Europe join the European Union and adopt the higher EU food standards, Moldova has also lost market access to these countries.

In recent years, the broadening and tightening of food safety requirements has become an international trend – not only in OECD countries but also in a growing number of developing and transition economies. In addition to government standards, supermarkets and other major buyers of food and agricultural products often have higher requirements for food safety and quality, and these have become increasingly important for market access. As income levels rise in Russia and Ukraine, Moldova's primary markets, and as more and more food products are sold through supermarkets, market segments accepting products produced according to former GOST standards will shrink and will offer lower prices than will be attained in segments requiring international standards.

Modernization of the Moldovan system of management of quality, food safety, and animal and plant health will therefore be necessary both to maintain access to profitable market segments in CIS countries and to maintain and increase access to new export markets through diversification, especially in the expanding EU. Replacement of the present system of mandatory standards and overlapping inspections by one based on fewer mandatory regulations, voluntary standards, and streamlined inspections will reduce costs — hence increasing competitiveness — at the same time it improves food safety and agricultural health.

Food Safety and SPS Institutions, Legislations, and Capacities and Recommended Actions

The following presents the main issues in Moldova's current food safety and SPS system and makes recommendations for improving the system and capacity building.

Institutional setup. The organization of public services for food safety and SPS management in Moldova requires adjustment. Moldova has many institutions involved in food safety and SPS management despite severe budgetary limitations. Overlapping responsibilities lead to repetitive inspections and high costs for Government and private sector. The situation also allows too much scope for rent seeking. The organization falls short of following the generally held principles of delineation of tasks between health and agricultural authorities and separation of responsibilities between standard-setting and food safety management. To make better use of its scarce resources, Moldova should clarify the responsibilities of each agency and to eliminate duplication and overlaps. One particular way to achieve this is by creating a single food authority combining the food control functions currently distributed to the Ministries of Agriculture and of Health and Moldova Standard.[6]

1. *Establish a coordination unit consisting of a chief coordinator and contact points from various government agencies involved in SPS management.*
2. *Identify areas of overlap and gaps in responsibilities among agencies managing food safety; assess the best option for Moldova, a single agency for food safety or a multi-agency structure with improved alignment among the present services and clearer definition of the roles and responsibilities of each agency; and make a plan to implement the new structure.*

Risk assessment and economic analysis. Regulations and investments in capacity building for food safety and agricultural health should be based on considerations of costs, opportunities, and risks. Together these assessments form a scientific basis for SPS management. Central to the management of food safety and agricultural health under WTO principles is *risk assessment*, which involves the identification and characterization of hazards, an evaluation of likely exposure to the hazard, and an estimate of the adverse effect of exposure.[7] Scientific risk assessment is the prerequisite of effective risk management. *Economic assessment* is essential for policymaking. Analysis of costs and benefits should be conducted before the adoption of any regulation or standards. Moldova lacks expertise in both economic analysis and risk assessment, and external assistance is needed to build up capacity in these areas.

3. *Assess Moldova's competitiveness in fish, dairy, and livestock products to determine the potential benefits of investing in EU third-country import status for these products.*
4. *Conduct cost-benefit analysis of current livestock investment strategies of the government and donors.*
5. *Provide assistance to develop and train a core group of risk assessors.*

Regulatory system. At the time of its accession to the WTO, Moldova adjusted its legislation to comply with international requirements. The reform of the regulatory system needed to implement the law is largely still pending, however, and further revisions of the laws may be desirable. The wholesale transposition of GOST standards into Moldovan standards after independence maintained a regulatory morass ill-suited to today's needs. Moreover, because new inspection and technical procedures have not been developed, in practice many inspections continue as if the former GOST standards were still mandatory. Thousands of technical rules transposed from GOST require reassessment for compatibility with international standards principles and to determine whether they contribute to market and private sector development, in particular to the food and agriculture sector. Ultimately, these rules should be abandoned,

[6] It is our understanding that the FAO may already have provided advice in this regard.

[7] S. Slorach et al. 2002.

replaced, or changed into voluntary standards. New bylaws based on international standards and regulations should be developed, the operating implications of the revised regulatory rules for quarantine and inspection should be signaled, and changes should be made to daily enforcement practice.

6. *Prepare a program of work for replacing the existing regulatory system with a system compliant with international standards and good practice for a market economy (including resources needed and methods and principles) with priorities on fruit, vegetable, and nut regulations and voluntary standards. Provide support to the regulation-setting task force over the next 2 to 3 years.*

Certification. The goal of the Moldovan certification system for SPS should be to facilitate trade while ensuring that public goals for the health of humans, plants, and animals continue to be met. As Moldova introduces new international and European norms, many aspects of the certification system will change, including the responsibilities of various ministries. During the intervening period, the Government should aim to eliminate duplication and other unnecessary requirements, while allowing the private sector to take on as many responsibilities for certification as possible, albeit under public supervision.[8]

7. *As the Ministry of Health completes the development of the more important horizontal technical regulations regarding food safety, conformity assessment certificates for those food products should no longer be mandatory. In the meantime, for products requiring mandatory assessment, private bodies accredited by the Accreditation Center should be allowed to issue legally valid conformity assessment certificates.*
8. *Review the veterinary certification process. Veterinary certificates should only be issued once for products before entering the market at border points, slaughter points, and meat-packing facilities. Veterinary inspection of the finished or processed good for consumption made from products that have already passed veterinary inspection should be discontinued, except in cases of calamities. Programs for veterinary control of the informal market should be based on risk assessment.*
9. *The Ministry of Economy and the Ministry of Finance/Moldovan Department of Customs should issue letters eliminating the requirement for national conformity assessment certificates for exports at border checkpoints.*

Accreditation. An accreditation system is at the heart of the SPS infrastructure and represents a step toward establishing internationally recognized facilities. The National Accreditation Center will play a major role in ensuring that Moldovan labs, certification agencies, and so on are recognized abroad. The Accreditation Center needs assistance for its efforts in seeking Mutual Recognition Agreements (MRA) with other countries, particularly the European Union.

10. *Evaluate the current practices of the Accreditation Center for conformance with current and projected trading partners' accreditation standards, developing an action plan for the recognition of the Accreditation Center by the European Union, and helping the Center develop a training program on EU requirements for Moldovan laboratories.*

Laboratory system. Each government agency involved in SPS management in Moldova appears to have its own system of central and regional labs. Under-funded, poorly equipped, and lacking trained staff, many labs are unable to perform their designated functions. This is particularly the

[8] Moldova Standard may be in the process or have already enacted a new supplier's certificate of conformity. This needs to be confirmed and reviewed.

case for *rayon* (district) labs. Cases have been found of overlapping testing, which causes waste of public resources and imposes additional costs on the private sector. It is more desirable to develop well-defined authorities backed by central control (reference) laboratories with adequate equipment and staffing. Such labs might allow the consolidation of resources for international accreditation. It would also be desirable to indicate areas in which private sector laboratories can take on an increasing role in certification functions.

11. *Evaluate Moldova's laboratory structure and help develop a strategic plan for the consolidation and future development of Moldova's laboratories.*
12. *Laboratory reinforcement is needed to enable Moldova to deal with the rapidly increasing demands for improved surveillance and monitoring for food safety and agricultural health and to improve the scientific basis for mandatory regulations and voluntary standards. Benefit-cost analysis should be used to determine to what level national public capacity should be developed, compared to use of contract private or regional facilities for high-cost, low-volume analyses.*
13. *Consolidate the veterinary laboratory system at central and* rayon *levels to meet restructured monitoring, surveillance, diagnostic, and certification strategies, based on priority needs and available budgetary support.*

Inspection, monitoring, and surveillance. The prevailing system of monitoring, surveillance, inspection, and quarantine for food safety, plant and animal health, and agrochemicals was transposed to Moldovan law from the GOST system and loses part of its rationale in the context of commerce based on international standards and market economy principles. Moreover, the system is not sufficiently based on cost and risk assessment and not well prioritized. It should be redesigned during the transition period.

14. *Evaluate inspection, monitoring, and surveillance programs with regard to priority setting and cost effectiveness, propose methods for design, and formulate a program for the first year.*
15. *Adjust law and policy to make the CPM responsible for food safety in the Moldovan marketplace with consolidation of authority for market testing and inspection of all food products as well as sales points for food and beverages.*

Border control. It remains an open question whether Moldova's border control system and border procedures are in compliance with international requirements. Assistance is needed for independent international expertise to assess whether Moldova's SPS control systems and border procedures meet the WTO test of nondiscrimination, and an action plan should be developed for bringing these systems into conformance with international requirements, as necessary.

Moldovan Customs' goods-handling procedures and IT equipment are moving ahead faster than Moldova's veterinary and plant inspection services can handle. Investment in information and communications technology (ICT) for the veterinary and plant inspection services is needed to keep them up to date with customs procedures and to improve the accuracy and transparency of their data management.

Fumigation for plant quarantine is currently a monopoly of the Moldova government. Services are provided in fixed locations using essentially one fumigation technique (methyl bromide). The rigidity of the current system adds unnecessary costs to exports and imports and makes it difficult to introduce alternative treatments that are more environmentally friendly and better suited to some, especially higher-value, horticultural products. To overcome these shortcomings, Moldova

should consider privatizing the plant quarantine treatment service. Assistance is needed to study the benefits, costs, and governance requirements for privatization.

16. *Assess whether Moldova's SPS control systems and border procedures meet the WTO rules of nondiscrimination, with a view towards developing an action plan for bringing these systems into conformance with international requirements, as necessary.*
17. *Judiciously improve the ICT of the veterinary and plant inspection and quarantine services to ensure compatibility with the IT system of the Customs Service and to improve the accuracy and transparency of their data management for veterinary and plant quarantine inspection.*
18. *Improve veterinary and plant inspection and quarantine border-crossing sampling and diagnostic capacity (pilot tools, equipment, and procedures for a selected set).*
19. *Study the benefits, costs, and governance requirements for privatization of fumigation and treatment services for plant quarantine, perhaps combined with restructured truck and railroad car sanitation and fumigation services.*
20. *Following a benefit and cost assessment, draft a plan and budget to upgrade the Central Plant Inspection and Quarantine Laboratory and selected* rayon *control laboratories to enable them to respond to the WTO SPS requirements.*

Emergency response and stamping out. The present system for stamping out livestock diseases should be combined with a comprehensive restocking program to align producer incentives with public health and agricultural health priorities. The basic system needs to operate for animal and product destruction, as well as rendering or BMB (bone meal and blood) processing and the back-end disposal of waste and bio-hazard materials at the local level. Additional donor funding may be needed initially to support emergency operations related to destruction of free-range poultry flocks (ducks and geese) in the event of the spread of avian flu.

21. *Design an improved system to support the stamping out of livestock diseases, with a special emphasis on zoonoses, with the understanding that budgetary and technical constraints force Moldova to prioritize carefully; focus initially on a limited number of diseases.*

Reorganization of veterinary services. The size of technical staff in public veterinary service can be reduced by having certain functions privatized.

22. *Separate public and private functions in veterinary services and provide support for the privatization of curative veterinary services.*

Pesticide management. Thousands of tons of obsolete pesticide left over from the Soviet era constitutes severe environmental, agricultural, and health hazard in Moldova. The World Bank project on POPs (persistent organic pollutants) stockpiles management and destruction and EU assistance for the pesticide destruction strategy would enhance confidence in the safety of Moldovan agricultural products in both domestic and foreign markets. Additional assistance is needed to eliminate POPs and design a system for pesticide container collection.

Testing of pesticide formulations for compliance with labels and grades should be assigned to a laboratory with the necessary equipment. The State Center for Certification and Approbation of Phytosanitary Means and Fertilizers has the best capacity to do pesticide formulation testing, but requires further capacity building to do so. The rigid and unnecessary mandatory requirement of three years of testing experience before registration should be abolished, and a new policy

accepting trial information from neighboring countries and similar environments should be adopted before any assistance can be provided in this area.

23. *Conduct cost-benefit analysis and design a system for pesticide container collection and disposal.*
24. *Design and train staff in risk assessment related to the introduction of new phytosanitary means and fertilizers in order to reorient registration policy.*

Information and education. Awareness raising and education for farmers, food handlers, and consumers are important elements in improving food safety and agricultural health, and programs to this end should be developed or reinforced in Moldova. One outstanding issue in public and animal health is the high occurrence of parasite-induced diseases. Public hygiene education and the promotion of better agricultural health practices should be part of the anti-parasitic disease campaign.

25. *Initiate food safety educational campaigns for government staff, farmers, food handlers, and consumers.*
26. *Expand antiparasitic disease campaigns carried out by* rayon *councils with the support of the local CPM and Veterinary Services. These should be extended beyond human curative treatment to preventive actions with domestic animals (especially dogs) and livestock, that is, the segregation and fencing of slaughter facilities. National authorities can help with the design of these programs, but community-implemented parasite control programs tend to be more successful than those driven from the center.*

Private sector. Moldova's food industry needs upgrading in facilities, equipment, as well as quality and safety management skills. Deficient public infrastructure, such as poor water quality, also increases the cost to the industry of meeting food safety standards, hence final product cost. Serious consideration should be given to providing technical assistance and training to the food processing industry.

27. *Develop a support program for upgrading food businesses. Private sector upgrading projects may cover plant renovation, hygiene facility improvement, quality management, water supply, waste management and supply chain organization. The support should include comprehensive improvement plans for the convergence toward EU principles of hygiene in food processing, accompanied by timetables and a financing plan.*

Other programs. The improvement of water quality and the collection and safe disposal of POPs require large funding and have broad social and environmental impact beyond food safety and SPS. Actions in these areas might be taken under other programs, but they will have a direct impact on food safety and SPS management.

28. *Provide support for packing, transport, insurance, and disposal of highest risk pesticides.*

Funding of Food Safety and Agricultural Health Management

Additional efforts and budget are needed to reform the legal and regulatory system and to upgrade technical and human skills for SPS management in Moldova. Since Moldova is a small country with limited financial resources, however, funding should be selectively applied and carefully

prioritized. The scope of solutions should include efforts that could be contributed by the private sector. For the short- and medium-term, additional investments will be necessary to upgrade the SPS management system. For the longer term, new efforts could be funded from savings from increased efficiency, abolition of outdated mandatory standards and certifications retained from the GOST era, and reduction of efforts for low-priority tasks.

This action plan provides a rather comprehensive – though not exhaustive – set of recommendations affecting food safety and agricultural health management in Moldova for the next five to six years and covers activities of both the public and the private sector. Major investment must be preceded by institutional reform. An estimated total of US$ 9.7 million will be needed to allow the public sector to address these issues. Roughly US$ 3.02 million of assistance is proposed for improvement in the private sector. For the Moldovan government, this action plan provides suggestions on basic principles and specific approaches for improving the food safety and agricultural health management. For donors and international organizations, it could serve as a guide for providing technical and financial support to help Moldova achieve these goals.

1. OVERVIEW OF MOLDOVA'S AGRICULTURE AND FOOD SECTOR

1.1 Like other former Soviet republics, Moldova's economy suffered from the shock of the break-up of the Soviet Union. Supply chains collapsed and output in most sectors shrank. Loss of assured input and output markets in the former Soviet Union (FSU) severely affected farm and agro-processing industries. After a decade-long contraction, Moldova finally started to register positive economic growth in 2000. The period between 2000 and 2004 recorded average annual growth rate 0f 6.9 percent. Agricultural output very much followed the general trend in the economy but with lower growth rates. By taking into account a 10 percent decline in output in 2003 due to adverse weather conditions, the average growth over the period 2000–2004 was less than 1 percent. Although Moldova has favorable conditions for agricultural development, its generally acknowledged potential has yet to be realized.

1.2 Striking adjustments have occurred in the composition of Moldovan agriculture production since independence. Grains, oilseeds, and other low value crops increased in importance for subsistence, and vegetable production area increased, at the expense of perennial fruit and vine crops. Wine grapes, once Moldova's second largest foreign exchange earner (behind remittances), declined, dragging wine production down through the end of the 1990s; only in 2003 did new planting start to make inroads on the steady decrease in vineyard area.[9] Most of the livestock sector has also been on a long decline since independence. Only poultry has shown substantial growth over the past half decade.

1.3 The agricultural sector is characterized by a dualistic structure. Farming is a safety net providing subsistence for most farmers, many of whom have little interest in investing in their farms because of a lack of market incentives. However, a small – but growing – segment of farmers, aiming to increase income through commercial farming, are looking for growth opportunities and making efforts to increase output and profit. They depend primarily on the agribusiness sector for market access, technology, and, at times, inputs. The health of commercial agriculture and agribusiness is heavily dependent on a good investment climate and policy environment.

1.4 The Moldovan consumer market has become more diversified. With increased income in urban areas, partly linked to remittances, consumers are demanding more varied and higher quality foods. This demand has led to increased imports of foods not produced in the country, such as foods of tropical origin and processed products. The decline in national livestock output and productivity has also caused Moldova to become a net importer of meat and meat products since 2001.

[9] Development Alternatives, Inc./BIZPRO 2004.

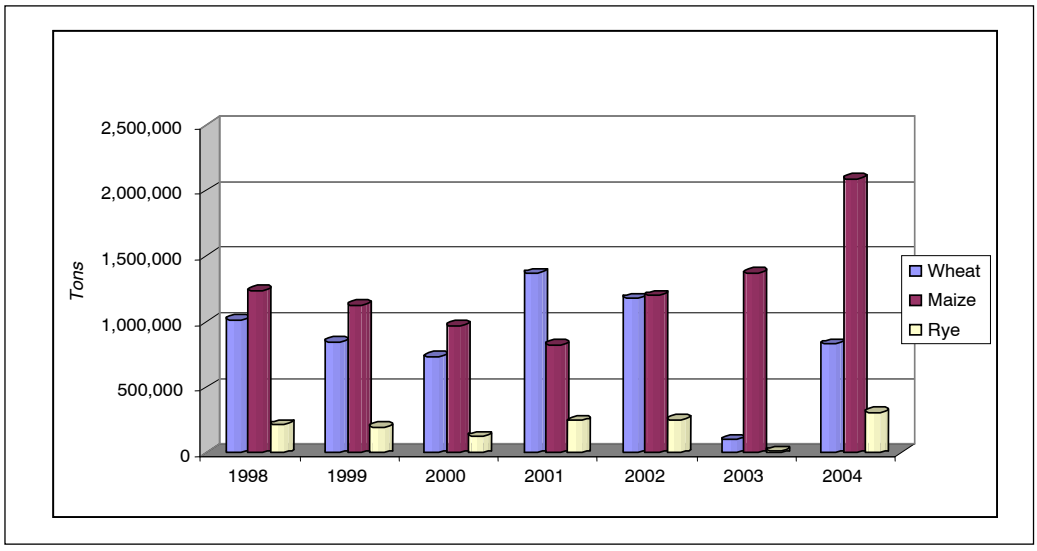
1.5 Moldova's agriculture export offer great potential, but it remains largely untapped.[10] Moldova's agricultural exports heavily depend on the CIS markets and need diversification. Russia takes more than half of Moldova's agro-food exports, and CIS countries combined constitute about three-quarters of Moldova's total export market. Moldova has great difficulty accessing the EU market due to its inability to meet its food safety and SPS requirements, among other factors. The concentration of export market implies great vulnerability to shocks in the CIS and particularly in the Russian market. Improving SPS management would enable Moldova to diversify its trading relations.

PRIMARY AGRICULTURAL PRODUCTION

Crop production

1.6 Crops contribute about 70 percent of Gross Agricultural Output Value. Its climate conditions and high native soil fertility makes Moldova very well suited to growing most temperate fruits and vegetables, potatoes, and cereals. Production of cereals, especially maize, has increased since independence, providing subsistence and feed for higher value livestock products.

Figure 1: Moldova production of major cereals



Source: MAFI 2005.

1.7 Fruit and vegetable production contracted sharply after independence. Table 2 compares the 1985 and 2002 structure of fruit and vegetable production in Moldova. With privatization of wineries in the late 1990s and FDI in processing facilities, fruit and vegetable production has regained momentum. Recently the wine grape area has begun to stabilize. Fruit and vegetable production is more profitable for farmers than are cereals, oilseeds, and sugar production, and it will recover further as access to foreign markets improves.

[10] The *Moldova Agricultural Policy Note – Agricultural Market* (World Bank, 2005) provides detailed analysis of Moldova's competitiveness and potentials in international agro-food market, particularly regarding fruit and vegetable, cereal and oilseed – the most significant agricultural products for Moldova.

Table 2: Moldova's production of horticultural crops, 1985 and 2002–2003, (% and thousand MT)

	1985	*2002*	*% Change 1985–2002*	*2003*	*% Change 2002–2003*
Fruits	1,654	968	-41	1294	34
Apples*	793	227	-71	494	118
Wine grapes	631	544	-14	577	6
Table grapes	24	97	304	101	4
Other fruit, berries and nuts	206	101	-51	123	22
Vegetables	1,643	717	-56	657	-8
Potatoes	408	325	-20	303	-7
Tomatoes	872	100	-89	106	6
Other vegetables	363	292	-20	249	-15
Total fruits and vegetables	3,278	1,674	-49	1951	17

Source: Compiled from Department of Statistics and Sociology of the Republic of Moldova, CNFA, and Intermedia.
*: Apples in 1985 calculated as seed fruit less an estimate for pears.

Livestock production.

1.8 Livestock production in Moldova consists of meat, milk, and eggs. Table 3 shows that the production of most major products dropped significantly after independence. The decline bottomed out in 2000–2001, and recent years have seen a moderate recovery of growth for most products. Egg production is a notable exception to this trend: it has steadily increased since 1997, and exports are considerable.

Table 3: Moldova's livestock production, 1992, 1999–2005 (thousand MT)

	1992	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Meat								
Beef and veal	72.8	21.1	18.0	15.6	16.1	16.3	23.0	23.5
Poultry meat	39.1	16.2	16.3	19.9	21.2	21.7	22.2	23.3
Pork	113.8	60.8	49.7	43.6	44.9	43.2	38.0	38.5
Mutton and lamb	3.9	3.6	3.2	2.6	2.7	2.6	2.5	3.0
Milk								
Cow's milk, whole, fresh	1,128.3	569.0	554.8	560.6	582.5	570.2	600.0	630.0
Sheep's milk	5.6	16.1	13.9	13.9	16.3	17.4	20.0	20.8
Goat's milk	1.1	4.3	4.6	4.9	5.5	5.5	8.0	8.3
Eggs	28.6	31.1	32.1	34.6	37.6	34.7	37.4	43.1

Source: FAOSTAT (last accessed June 2006).

AGRO-PROCESSING

1.9 During the Soviet era, the agro-processing industry in Moldova was part of the centrally planned system. During the transition period, most upstream agricultural collectives were broken up into individual land holdings, and processing plants and the downstream sector were also privatized. Privatization led to a collapse of the vertically integrated system. Subsequently, the new owners downsized facilities to better fit prevailing market conditions.

1.10 Currently, food and beverage processing makes up about 60 percent of all Moldovan manufacturing.[11] A few hundred firms operate in the food processing sector, and the most important products include wine, fruit and vegetables, meat, and dairy products (see Table 4 and Appendix 1 for detailed discussions of each processing industry). Although in recent years some processing companies have been able to revitalize with good success, much remains to be done. Many factories were built using industrial designs from the 1940s and 1950s and consequently have outdated processing and packaging lines. The equipment is not energy efficient, and packaging does not meet modern standards. Many enterprises lack modern management practices, investment capital, and the financial resources to compensate skilled labor adequately.

Table 4: Moldova's food processing plants

Food processing companies by activity	***Number***
Fruit and vegetable processors, including dried fruit and herb producers	57
Meat processing	14–100
Dairy processing	26
Wineries, fortified wine or brandy producers	169

Sources: BIZPRO 2004; CNFA 2004; Lozevanu 2005; meat industry sources.

1.11 As the business climate in Moldova improves, foreign direct investment grows to take advantage of Moldova's low wage rates and well-educated work force. Since the late 1990s, a wave of investment, primarily from Russia, has occurred in the wine and distilled spirits industry. Additional recent investment in the wine industry has come from the United States, Germany, and France. Investment in meat and dairy processors has come primarily from Belgium and Holland.

1.12 HACCP (Hazard Analysis Critical Control Point) is internationally recognized as an effective approach for food safety management. Increasingly it has become a mandatory requirement for the food industry (for high-risk products) in many countries. For instance, the new EU food legislation requires that food businesses use HACCP plans and procedures for managing risks and the same requirement also applies to imports from food establishments in third countries. Moldovan companies differ widely in their places on the path to HACCP certification. Most are using an incremental approach, improving facilities, equipment, and practices as business volumes grow. Only the most recently constructed facilities can adequately implement Good Manufacturing Practices (GMPs) to implement a HACCP program.[12] This does not mean that these companies' food products are dangerous—canned fruits and vegetables and jams and jellies have low risk profiles and their production involves well-established command and control techniques known to produce safe foods—but it does mean that many older facilities do not meet requirements for entry into sophisticated markets. It also means that where HACCP requirements are mandatory (for example, fruit juice products in the United States), Moldovan companies that do not invest in new facilities will find themselves closed out of the market. Past EBRD and World Bank programs have enabled a few fruit processors to implement HACCP programs and increase their juice, preserve, and baby food sales to Middle Eastern, CIS, and European markets.

[11] *Statistical Yearbook of Moldova* 2005.

[12] GMPs are prerequisites to HACCP programs.

FOOD MARKETING

Marketing Channels

1.13 Vertical integration and supply chain coordination, whether through vertical ownership, formal contracts, or informal agreements, can improve quality, safety, and supply in the food processing sector. Informal agreements are common in developing and transition economies because contract enforcement institutions are often either absent or ineffective.[13]

1.14 In wine processing, the vertical relationship between farmers and wineries is advancing. Some wineries have entered a system of medium-term contracts with farmers. Wineries provide farmers with advance payments in the form of some inputs (chemicals, fertilizer, and so on) and technical assistance in the form of processor-owned technical services. Several wineries are integrating even further by purchasing vineyards.

1.15 The dairy industry is also integrating with farmers. Dairy companies organize milk collection centers over broad areas of the country. Processors offer some support measures to agricultural producers to avoid adulteration, improve milk quality, and ensure a stable milk supply. These support measures can take the form of provision of veterinary services, supplier financing for milk collection tanks, provision of milk quality-control equipment and materials, and technical and management consultations.

1.16 *Food traders.* Food distribution companies in Moldova are importers and dealers, supermarket import operations, or food processors themselves. The rapid growth of half a dozen domestic supermarket chains in Moldova, such as Green Hills and Number One, has moved much middle-class consumption off the streets and open markets and into modern stores. The large milk, meat, poultry, and fish processors (all raw materials imported) and the flour millers use a blend of owned shops and a sales/delivery work force to distribute their products. Smaller companies normally hire outside sales personnel who have their own transportation and pay them a commission for selling and distributing the product.

1.17 Metro Cash and Carry's entry into the semi-wholesale/large retail position in the supply chain has accelerated the shift of middle-class consumption to modern stores. It is the first international discount semi-wholesale and retail supermarket chain to enter Moldova. It is operated in coordination with Metro Cash and Carry Romania. Metro is also seen by customs and SPS authorities as a "good" company that follows all rules and regulations to the letter. This means that Metro can receive goods directly into the warehouse attached to its main store rather than going to the central customs terminal for final clearance. Metro formally receives final clearance at dockside for SPS inspections, and any treatments, such as mandatory fumigations for citrus, are usually completed at their facility.

1.18 *Retail market.* Moldova's urban markets are dominated by the supermarket chains in Chisinau, which has the largest concentration of consumers and much of the country's wealth. Open markets are important for fresh fruit and vegetables, locally slaughtered meat, small- and medium-scale processors, and dry goods sellers. Most Moldovans buy their fresh produce from the open market, but increasingly they enter supermarkets and shops looking for quality name-brand meat, dairy, and processed goods. Prices for fish, meat, milk, and even some fruits and

[13] See Gow and Swinnen 1998; Gow, Streeter, and Swinnen 2000; World Bank 2006.

vegetables are about the same in supermarkets and in the open market.[14] Supermarkets offer more reliable net weights, better and more sanitary storage and handling conditions for preserving product quality, and access to a broader range of product qualities than do the open markets.

1.19 Although a very large traditional, subsistence marketplace still exists in Moldova, the retail trend in urban markets is toward further consolidation under domestically formed or foreign-owned chains. Larger domestic producers and processors must improve their output of quality foods through good food safety standards or risk displacement by foreign suppliers. The trend toward retail consolidation offers strong incentives for upgrades in agro-processing and trade and supply chain integration.

1.20 *Trade and business associations* are weak when it comes to developing or pressing for universal codes of practice. Interviews with stakeholders suggest that strong agro-processors and the supermarket chains themselves would have more leverage to effect a change. If they can develop dynamic cooperation on codes of practice among their suppliers, they can drive the standards that will accelerate investment in improved food processing facilities and food safety practice.

AGRICULTURAL TRADE AND MARKET ACCESS

1.21 Although agriculture and agro-processing is the most important source of Moldova's export, agricultural trade has grown less vigorously as compared with total trade growth (Table 5). Both total exports and total imports have more than doubled in nominal values in the period 2000–2004. Food imports also more than doubled as the reviving economy and overseas remittances increased demand for foreign food products. By contrast, food exports only increased by about 80 percent. As a result, the share of food and agricultural products in total exports declined from 62 to 53 percent. The leading products for export increase were wine and fresh and processed fruits and vegetables (see Appendix 2). The CIS countries are Moldova's most important partners in agricultural trade, accounting for 76 percent of its total agro-food exports in 2004 (Table 6). Little of Moldova's export goes to the industrial countries such as the European Union or the United States.

Table 5: Moldova's agro-food exports and imports,* 1997–2004 ($'000)

	1997	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Exports								
Total export	567,759	631,815	464,166	471,532	568,124	622,638	790,294	986,255
Agro-food products	381,394	459,698	296,700	290,241	357,643	400,423	463,104	527,295
Agro-food products %	*67*	*73*	*64*	*62*	*63*	*64*	*59*	*53*
Imports								
Total	746,783	1,023,450	586,570	776,981	892,462	1,038,352	1,398,599	1,773,742
Agro-food products	133,310	93,465	38,209	110,425	143,471	147,070	203,794	225,025
Agro-food products %	*18*	*9*	*7*	*14*	*16*	*14*	*15*	*13*

Source: WITS, UNCOMTRADE. Accessed May 11, 2006.

* Discussion of "food and agricultural products" and "agro-food" in this report includes product categories 01-24 in the HS code system.

[14] Visits to four open markets in Chisinau showed that many vendor scales over-stated products by 10–15% when compared to calibrated scales, eliminating the nominal differential between supermarket and open-market prices.

Table 6: Moldova's agro-food export by destination, 1997–2004 ($'000)

	1997	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Total export of food and agricultural products	**381,394**	**459,698**	**296,700**	**290,241**	**357,643**	**400,423**	**463,104**	**527,295**
to CIS countries	256,367	353,396	207,876	218,492	276,422	285,151	342,852	399,654
(%)	*67*	*77*	*70*	*75*	*77*	*71*	*74*	*76*
to EU-15	40,287	34,744	28,139	23,699	28,814	29,968	40,754	46,316
(%)	*11*	*8*	*9*	*8*	*8*	*7*	*9*	*9*
to CEEC*	64,090	55,397	46,649	38,260	33,079	50,684	57,042	52,025
(%)	*17*	*12*	*16*	*13*	*9*	*13*	*12*	*10*

Source: WITS, UNCOMTRADE. Accessed May 11, 2006.

* CEEC: Central and Eastern European Countries, here including eight new EU members from the region (Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Slovakia, and Slovenia) and two EU accession countries (Bulgaria and Romania).

1.22 **The Russian and other CIS markets are relatively easy for Moldova to access in terms of SPS requirements.** Moldova and other CIS countries share much of the same GOST standards and veterinary and phytosanitary regulations. Trade with these countries also benefits from historical ties, extensive ethnic networks, and regional and bilateral free trade agreements. However, these markets are characterized by uncertainty due to political factors. At the same time, these trading partners are transforming their standard systems. Russia has applied for WTO membership and is expected to substantially transform its standard system to comply with WTO requirements. Both Russia and Ukraine have indicated that they will gradually harmonize their food safety and SPS standards with those of the EU. Their systems are likely to become a hybrid of revised GOST and FSU-SPS regulations and those of the EU over the next five years.

1.23 **Commercial standards will accompany the rapid development of modern retail systems in Russia**, outpacing slow regulatory reforms. Just as in OECD countries, suppliers will need to meet the retail chains' requirements, which go beyond the public food safety requirements. As international supermarket chains are already taking market share from smaller shops, it is expected that the market segments accepting products produced according to former GOST standards will shrink and offer lower prices than do the segments requiring international standards. This trend is already evident in wine, where modestly priced, good-quality South African and South American wines are rapidly gaining market share in Russia.[15]

1.24 **Moldova's exports to the European Union remain small** (Table 7)**.** Although wine, nut,[16] large fruit and vegetable processors and specialty cereal exporters have succeeded in exporting to the EU, most Moldovan companies cannot meet the requirements for quality, safety, and volume of the EU markets. For instance, Moldova was a major supplier of fresh produce to the FSU, but none of its current companies can supply the EU with the volume of fresh produce exports that would warrant investment in the comprehensive and stringent EUREP-GAP or British Retailer's Code of practice. Moreover, nearly all fresh and processed food companies in

[15] Development Alternatives, Inc/Bizpro 2004; CNFA 2004. Trade statistics (UNCOMTRADE) show that Moldova's share in Russia's grape wine import declined from 49 percent to 37 percent between 2002 and 2005.

[16] Moldova is the third largest supplier of shelled walnuts to the EU and has been holding its market share since 1998. The walnut story is one of serendipity, since most trees were planted by the State as windbreaks along roads. Moldova's low labor costs and duty-free entry into this market niche of the EU have also contributed to its success.

Moldova lack the infrastructure and organization needed to meet the basic requirements for Good Manufacturing Practices (GMP) as recognized in the EU or the USA.

1.25 Yet, the EU market offers opportunities for a range of products and specialties with relatively attractive prices. Further consolidation of Moldovan production and processing capacity is likely, with older companies replaced using investments from regional (Russian, Romanian, and Turkish) or extra-regional (western European and USA) businesses recognizing Moldova's good medium-term potential as a low-cost producer with an educated work force.

Table 7: Moldova's exports of agro-food products to the EU-15 (US$'000)

	1997	1998	1999	2000	2001	2002	2003	2004
Total agro-food	**40,287**	**34,744**	**28,139**	**23,699**	**28,814**	**29,968**	**40,754**	**46,316**
Meat and edible meat offal	--*	371	314	--	--	--	--	--
Dairy; birds' eggs; natural honey	364	103	284	225	325	1,205	295	334
Edible vegetables and certain roots	--	--	372	67	64	385	40	85
Edible fruit and nuts; peel of citrus fruits or melons	11,616	15,525	15,055	14,939	16,187	14,144	19,605	21,611
Cereals	2,485	2,203	2,167	286	781	4,496	11	925
Oil seed; oleaginousnous fruits; misc. grains, seeds, and fruit	2,686	2,908	878	3,964	3,687	705	520	4,070
Prep. of vegetable, fruit, nuts, or other parts of plants	22,315	12,026	7,407	2,713	6,162	5,882	14,838	10,346
Beverages, spirits, and vinegar	99	451	569	383	425	986	1,671	2,043
Residues and waste from the food industry	100	13	150	268	190	824	2,363	5,213
Tobacco and manufactured tobacco substitutes	--	181	58	25	150	552	254	397
Other	622	962	882	827	841	789	1,158	1,292

Source: UNCOMTRADE (last accessed May 2006).

*: No export recorded.

1.26 **Moldova needs to diversify its exports market to reap more benefit from trade and to reduce the impact of disruptions of trade with CIS countries.** The current over-dependence on the CIS, particularly Russian, markets renders Moldova vulnerable to shocks and political interventions by the latter. For example, Russia blocked all exports of fresh fruits and vegetables from Moldova in May 2005. It built its case on the evidence of falsified phytosanitary certificates and the presence of soil on bare-root plants. Despite official missions by Russian phytosanitary experts to observe modified procedures and discussions between the agricultural officials of the two nations, the ban remains in place. Again in March 2006, Russia banned the import of wines from Georgia and Moldova on the grounds that they do not meet food safety standards. The ban on Moldovan wine was lifted in November 2006 but the ban on Georgian wine remains.

1.27 **The EU, a next-door market with a population of nearly half a billion, should be a more important destination for Moldova's agricultural exports.** An improved SPS system, particularly EU-compliant standards for products with clear comparative advantage and export potential, will greatly improve Moldova's access to the EU market. Experiences of other countries in central and Eastern Europe have shown how EU-harmonized standard and technical regulations have boosted agricultural export (Box 2). For instance, Slovakia and Lithuania both

had total agro-food export comparable to that of Moldova in the late 1990s. As a result of their accession to the EU – for which harmonization with the EU *Acquis* and the upgrading of food safety and SPS management capacity and infrastructure is a centerpiece of transition – their export to the demanding EU market tripled between 1998 and 2004. This caused their total export to more than double during the same period. By contrast, Moldova's total agricultural export grew by a mere 15 percent over the same period and continues to rely heavily on the CIS markets. Its exports to the EU grew by 33 percent between 1998 and 2004 and that to CIS by only 13 percent. It is also worth noting that its export to CEEC declined during this period. Clearly, due to CEEC's adoption of the higher EU standards, their markets are becoming less accessible to Moldova's agricultural products.

Box 2: Export boosted by EU membership and improved food safety and SPS management

Countries seeking EU membership are required to bring their food safety and SPS management systems up to the EU level so that food safety in the common market will not be compromised. Candidate countries must harmonize their legislations and standards with the EU *Acquis Communautaire*. At the same time, they must – with EU assistance – build up the human skills and invest in SPS infrastructure necessary to enable them to implement the *Acquis*. As a result, those central and eastern European transition economies that joined the EU in 2004 and the accession countries have greatly enhanced their access to the demanding EU market for agro-food products and have increased their overall exports as well.

The following table illustrates the growth of agricultural export to different markets by central and eastern European countries over the period from 1998 to 2004. Bulgaria and Romania are expected to join the EU in 2007, and the others became EU members in 2004.

	Growth of Agriculture Export 1998–2004 by destination (1998 level =100)			
	EU-15	CEEC	CIS	Total World
Bulgaria	175	278	38	154
Czech Republic	245	193	45	177
Estonia	218	140	22	81
Hungary	176	138	73	142
Latvia	339	362	116	221
Lithuania	364	354	103	205
Poland	279	277	88	208
Romania	273	143	106	168
Slovak Republic	304	229	74	218
Slovenia	131	130	112	125
Moldova	***133***	***94***	***113***	***115***

Data source: Calculations based on UNCOMTRADE data.

Between 1998 and 2004, most of these countries have seen their total food and agricultural exports increase by a large margin. Total exports of four countries — Latvia, Lithuania, Poland, and the Slovak Republic —have more than doubled. The biggest source of the overall increase is the EU, including both the original EU-15 members and the new and prospective EU countries in central and eastern Europe. Latvia, Lithuania, and the Slovak Republic more than tripled their export to the (old) EU in that period, and exports from the Czech Republic, Estonia, Poland, and Romania more than doubled.

Source: This material derives from information gathered for and presented in this report.

1.28 Many factors have contributed to the rapid growth of agricultural export from the new and prospective EU members, including good policy environment, clear objectives, and improved investment climate. Moldova, by contrast, has generally lagged behind in these competitiveness factors. For example, its weak performance in exports partly stems from declines in production

and competitiveness of livestock products. Granted, other barriers to Moldova's access to the EU market exist, such as the EU protection of the wine, fruit, and vegetables sectors and, the competitive advantage gained by other CEE countries through EU membership (leading to a free flow of goods and to various farm subsidies). However, meeting higher food safety and SPS standards, thus overcoming what had previously been the most important factor constraining EU market access, has been crucial to the success of CEE countries.[17] Upgrading food safety and SPS systems, particularly bringing standards and technical regulations for products with good export potential in line with EU regulations, is a prerequisite to enhancing Moldova's capacity to penetrate the EU market.

[17] Based on interviews in Lithuania and Poland for a region-wide study on SPS (World Bank forthcoming).

2. MAIN FOOD SAFETY AND SPS ISSUES

2.1 Risk assessment using scientific principles, accompanied by socio-economic analysis is the internationally accepted basis for the regulation of food safety and the health of agricultural systems in each country. In this chapter food-related health risks in Moldova are examined to help establish priorities in Moldova's food safety and public health programs. Then, animal and plant health are examined from a similar perspective, trying to identify those areas where interventions would support economic growth. Statistics on animal health in Moldova are reported officially to the OIE, so these figures are used in this report. Statistics on plant health in Moldova are scarce, so the discussion is almost entirely qualitative.

FOOD SAFETY AND PUBLIC HEALTH

2.2 Food safety and public health are a primary concern for SPS regulatory and enforcement systems. These concerns overlap with trade regulation where animal or plant products may transmit diseases to humans. A country's capacity to monitor and control food-borne disease is an indicator of its capacity to regulate, monitor and control the safety of food exports and imports.

2.3 *Food- and water-borne disease.*[18] Table 8 summarizes Moldovan statistics on food and water-borne illnesses.[19] The figures reported probably understate actual food-borne disease incidence by many times.[20] For the purpose of this report, the relative importance of food-borne diseases and their trends are more important than the absolute numbers, but even relative analysis is still undoubtedly subject to error. The table shows that overall food and water hygiene conditions improved in Moldova from the early 1990s, but that both parasites and diseases appear to be increasing again. The data show an unusually high incidence level for Asacarid parasite infections, suggesting substantial cycling of parasites in households and their environment. Other major diseases include unidentified infectious enteritis, shigella, and hepatitis A. The upturn in food-borne diseases surprised Government officials and the donor community, but is confirmed by Moldovan food safety specialists. Factors contributing to maintaining a reservoir of disease in the environment include increasing dependence on shallow wells as water pipelines break down, increased concentration of livestock around rural households, contamination in towns from

[18] Many food- and water- borne diseases are very difficult to distinguish in their causes. The phrase "food-borne disease" in this report is understood to include food- and water-borne diseases associated with the food chain.

[19] These statistics come from reports from polyclinics, hospitals, and other public health agencies mandated to report accidents and diseases to the National Center for Preventive Medicine.

[20] The Moldovan Center for Preventive Medicine indicates that many food poisoning victims do not seek medical attention until symptoms are very severe. In the cases of some parasitic infections, it may take a few years before people find the symptoms serious enough to report them to a doctor. In countries with advanced food-borne disease monitoring systems, food-borne disease may account for more than 30,000 illnesses per 100,000 people or nearly a 1-in-3 chance that a food-borne illness will occur in any given individual in a given year, e.g., in the USA (Mead et al. 1999) Estimates vary widely, cf. Council of Agricultural Science and Technology 1994. Study of the recent outbreaks of E. coli on spinach from California suggests that actual cases are twenty times higher than those reported to the U.S. Center for Disease Control (Wingert et al, 2007).

latrines, and lack of funds among the population for heating or treating water for personal hygiene.

Table 8: Food and water-borne disease morbidity index *(new cases per 100,000 people)*

Agent/ Disease	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004**
Hepatitis A	224.45	235.54	146.74	103.32	72.69	57.71	72.71	121.95	203.85	264.09	84.04
Typhoid	0.46	0.11	0.18	0.11	0.16	0.13	0.14	0.02	0	0	0.22
Paratyphoid	0.02	0	0.02	0	0	0	0	0.02	0.02	0	0
Salmonellosis	43.9	49.54	34.97	25.46	32.63	22.64	15.58	22.53	23.5	28.17	23.65
Unidentified or non-specific gastroenteritis	262.45	223.5	160.74	148.59	146.28	153.64	126.86	131.75	145.05	225.54	193.75
Identified enteritis (all forms)	125.63	107.75	81.21	83.88	81.03	76.19	72.15	94.8	93.6	133.81	95.9
Shigellosis	251.13	66.82	41.21	71.06	98.99	83.02	37.93	19.67	18.61	63.12	38.51
Ascaridae infections	317.05	279.45	243.54	253.62	248.75	150.03	144.44	177.19	149.65	207.09	186.59
Echinococcosis	-	-	-	-	-	0.69	2.36	4.36	4.25	5.67	2.94
Wild mushroom poisoning	0.6	10.11	5.43	1.3	0.72	1.55	4.75	8.93	5	3.22	10.2

Source: National Center for Preventive Medicine, Moldova.
Note: The morbidity index in Moldova is defined as new cases per 100,000 people.
* 2004 figures are understated because Eastern Moldova's Transnistra region is not included.

2.4 Food and water-borne diseases have great economic as well as health implications. There is a relatively well-accepted measure of the impact of disease that combines illness (morbidity) and death (mortality) impacts into a standardized indicator called the Disability Adjusted Life Year (DALY).[21] One measure closely (but not exclusively) related to food- and water-borne diseases is diarrheal diseases, which is used here as a crude proxy[22] for estimating the economic impact of food- and water-borne diseases. According to the WHO statistics, Moldova lost a total of 2,000 DALYs to diarrheal diseases in 2002. The magnitude of economic cost is considerable and, by applying the average salary of $600/year in Moldova reported for that year, can be estimated at $1.2 million. The actual economic loss is much higher when the treatment cost is also taken into consideration.

2.5 *Environmental hazards.* Moldova has two main areas of environmental concern. One is the contamination of aquifers. Most countries require that processed foods be prepared with water of potable quality. Many Moldovan food processing facilities use water drawn by boreholes from deeper aquifers to avoid problems with surface water, but groundwater quality in Moldova is largely influenced by the geochemical conditions, including natural zones of high fluoride,

[21] DALYs for a disease or health condition are calculated as the sum of the years of life lost due to premature mortality (YLL) in the population and the years lost due to disability (YLD) for incident cases of the health condition. It is a measure of a health gap between existing conditions and an ideal state where every person born in a country lives to their life expectancy without disease. See Murray and Lopez, 1996 and Murray et al, 2002.

[22] Use of this single proxy measure understates the incidence of food and water-borne diseases because it excludes: 1) many food and water-borne diseases in the country (WHO DALYs are estimated based on only the most important global diseases); 2) non-infectious diseases (e.g., cancers) which are caused in part by food- or water-borne disease.

strontium, and selenium. Borehole water must, therefore, be treated in most food processing facilities to provide the potable water needed for food processing and for staff.

2.6 The other area of concern is out-of-date and persistent organic pesticides (POPs). More than 5,650 tons of obsolete and prohibited pesticides from the Soviet era are still buried in landfills or scattered around. Although they are stored in their original containers, some have corroded and are leaking, creating a concern of contamination of surface or ground water and the food chain. The Moldovan government has taken a few steps towards their final destruction.

2.7 Lead contamination is of some concern on a few crops, such as walnuts harvested from public plantings along many roadways in Moldova, but is not a widespread problem.

2.8 *Food allergies.* None of the regulators, processors, or consumer organizations visited indicated that allergens or food allergies in general were a public health problem. Basic legislation is in place to regulate food additives and is currently being revised by a commission headed by the National Center for Preventive Medicine. Moldova is a producer and exporter of nuts and confections with nuts, especially walnuts. In some export markets (for example, the United States) products from facilities that process nuts on the same lines used for other products must declare the possible presence of nuts or nut fragments in all of their food products to alert highly sensitive individuals to potential allergic reactions.

LIVESTOCK HEALTH

2.9 Moldova has been a member of the World Organization for Animal Health (OIE) since 1993. Moldova has an animal health strategy adjusted to the nature of the disease, the type of disease risk present, the capacity of the veterinary services to monitor and screen for diseases, and the capacity of these services to intervene at the borders or points of disease outbreaks and to take preventive or curative measures. Compromises on intervention strategy are made throughout the system because of the fragile financial situation of small-holder producers.

2.10 **Classical swine fever (CSF)** is a former List A OIE disease[23] that must be reported immediately by national veterinary officials to the OIE when diagnosis is confirmed. Within the EU, because of the threat of rapid spread and mortality, the official policy is to stamp out the disease by destroying all swine in infected herds. Vaccinations are prohibited except in emergency cases when they are needed to slow the spread of the disease.

2.11 Moldova uses animal quarantine measures to prevent the import of infected stock or the movement of infected stock within the country, carries out essentially universal vaccination of pigs for CSF, and executes a form of modified stamping out when outbreaks occur. In 2002 two outbreaks and 58 deaths occurred. The dead animals were destroyed by burning. In addition, 1,100 animals were slaughtered in the infected areas.

2.12 To eliminate CSF from the domestic herds and achieve CSF-free status, Moldova needs to change swine feed management, increase its surveillance of wild boars, and develop better operating guidelines and a financial plan to support animal destruction and slaughter and restocking. It should also demonstrate strong controls on imported pork and viscera, the current raw material used for the most part by domestic ham and sausage processors. The costs of achieving disease-free status to meet EU import requirements would appear to be too high for a relatively small domestic industry with limited potential for exports, however, especially for a disease with no potential to harm human health or affect food safety.

[23] As of 2005, the OIE List A and B diseases were combined into a single list of reportable diseases that entered into force in 2006.

2.13 On the other hand, neighboring Romania adopted EU regulations in 2005 and now prohibits vaccination of domestic swine for CSF except as an emergency adjunct to stamping out. Romania experienced a CSF outbreak in early 2005 that was partly controlled by destruction and slaughter of infected herds, and it has been warned by the EU that failure to improve CSF control could delay accession in 2007. Thus, CSF will be a continuing point of SPS friction in trade relations between Moldova and Romania, with the intensity increasing if Romania does achieve CSF-free status.

2.14 The last outbreak of **foot and mouth disease (FMD)** in Moldova was diagnosed in 1980. A long campaign of vaccination and control ended in 1994. No new cases have been diagnosed in the surveillance of imported animals and animals in border zones since that time. The OIE, however, does not yet recognize Moldova as FMD-free. The EC's Health and Consumer Protection Directorate-General (DG-SANCO) characterizes the FMD and CSF surveillance programs as limited.[24]

2.15 **Newcastle disease** is a List A OIE viral disease of poultry, the last outbreak of which occurred in Moldova in 1992. Moldova follows standard practice of vaccinating essentially all poultry for Newcastle disease, along with import and internal movement quarantines and destruction of birds found to be serologically positive or exhibiting clear signs of the disease. As part of the disease monitoring process, very small numbers of birds have been destroyed in flocks in which potential Newcastle disease symptoms were observed. Vaccination efforts dipped below total flock size from 1999 to 2003, but no outbreaks were observed.

2.16 **Avian influenza,** another OIE List A disease, has not been detected in Moldova, but significant risk remains because two neighboring countries, Romania and Ukraine, have had outbreaks. Moldova also sits on the same wild bird flyway presumed to have carried highly pathogenic avian influenza (HPAI) into Romania. Moldova has blocked imports of live poultry from Russia and Romania and has imposed trade restrictions on live poultry and poultry products from countries that notify the OIE of outbreaks of low-pathogenic types of avian influenza. The Government of Moldova has established emergency teams and designed contingency plans in response to any Avian Flu outbreak, but it needs technical and financial resources for testing equipment upgrade, personnel training, and compensation funds for bird culling. As part of the Global Program for Avian Influenza (GPAI), a World Bank project with multiple-source financing of US$ 10.6 million has been approved for Moldova.[25]

2.17 Cattle health statistics in Moldova show remarkably low levels of **tuberculosis** and **brucellosis**. The EC has concluded that Moldova's annual TB testing is unreliable, however, and that its follow-up testing of cattle and herds on affected farms is delayed too long.[26]

2.18 A more complicated situation exists for **echinococcosis** in animals, a helminth parasite that cycles from wildlife to domestic livestock and pets before dead-ending in humans. A detailed discussion can be found in Appendix 3 .

CROP HEALTH

2.19 Moldova signed the International Plant Protection Convention (IPPC) in 2000 and became a full member of the organization in July 2006. It also joined the European and Mediterranean Plant Protection Organization (EPPO) in 2006.

[24] DG SANCO 2005.
[25] See Appendix 8 for more information.
[26] DG SANCO 2005.

2.20 As a small land-locked country surrounded by ancient agricultural areas, Moldova shares the pest and disease complexes of the region. Its plant quarantine list includes 84 insects, fungal diseases, bacterial diseases, nematodes, viral diseases, and weeds, all of which are covered by Moldova's phytosanitary and plant quarantine laws. Key issues of plant health vary by *rayon* because of differences in crop concentration. The following examples highlight a few of the plant health issues encountered during this study.

2.21 **Cereal and dry bean pests.** Cereals and cereal product dominate Moldova's imports and exports of agricultural products in term of tonnage, so stored product pests and diseases make up an important part of import and export inspections. In addition, dry beans are a significant part of food relief efforts in the country. Bruchid beetles are an important species with one *Bruchidius* and several *Callosobruchus* species encountered in import samples. The minor morphological differences among some *Callosobruchus* species pose identification difficulties for the central laboratory of the quarantine inspectorate. Detection of *Callosobruchus* spp at one of the border posts results in a hold being placed on truck or rail wagon movement until study of a sample by the central plant quarantine laboratory confirms the border inspector's finding. If the infestation is light, fumigation may be permitted. If infestation is heavy, the importer may either pay for destruction of the shipment or re-export the shipment.

2.22 **Western corn rootworm threat.** The Inspectorate for Phytosanitary Quarantine has mounted a major effort to monitor and inspect for *Diabrotica virgifera*, the Western corn root-worm (WCR). This insect is native to North America, where it is common in maize fields, depressing maize grain yields by about 10 percent. It was introduced to Europe in 1992 through Serbia and has spread extensively within the Danube watershed, reaching Romania in 1996 and the Ukraine in 2001. Because Moldova is on the key trucking route between Ukraine, Romania, and Central Europe, officials at the Inspectorate for Phytosanitary Quarantine are concerned that WCR can be easily introduced to Moldova. If so, the challenge will be the organization of an emergency response to trap, contain, and eradicate the beetle before it becomes fully established. The emergency response capacity of the Inspectorate is limited.

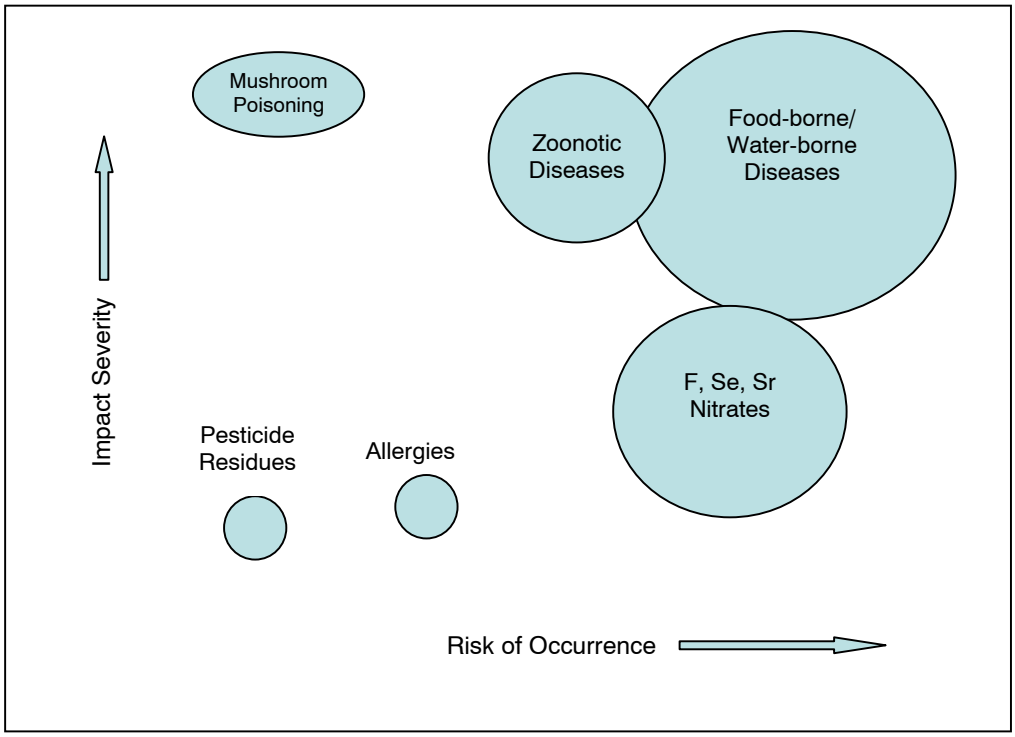
2.23 **Mediterranean fruit fly.** Moldova imports essentially all of its tropical fruit and most of its subtropical fruit, including citrus. The Mediterranean fruit fly (Medfly: *Ceratatis capitata*) is a quarantine pest. Standard Moldovan phytosanitary practice is to fumigate all citrus with methyl bromide, regardless of the season or availability of alternate hosts; however, the severity of Moldovan winters makes it unlikely that Medfly could establish itself in Moldova. A modification of current practice during at least the winter months would reduce the need for costly and polluting methyl bromide fumigation and improve the quality and shelf-life of citrus fruit offered for sale in Moldovan markets. Basic risk/benefit analysis would be needed to make this case.

FOOD SAFETY AND SPS RISKS

2.24 Risks have two dimensions: the likelihood of a problem occurring and the severity of the consequence if it occurs. Domestic food safety hazards and SPS concerns for exports can be quite different. Figure 2 presents a simplified risk and severity chart for groupings of food safety concerns in Moldova. The vertical axis approximates the relative severity of impact of a food safety problem. The horizontal axis represents the likelihood the problem will occur.[27]

[27] A standard risk-severity chart is normally done on individual diseases using epidemiological data combined with assessments of economic, socioeconomic, and political effects.

Figure 2: Severity and risk of occurrence of food safety issues in Moldova



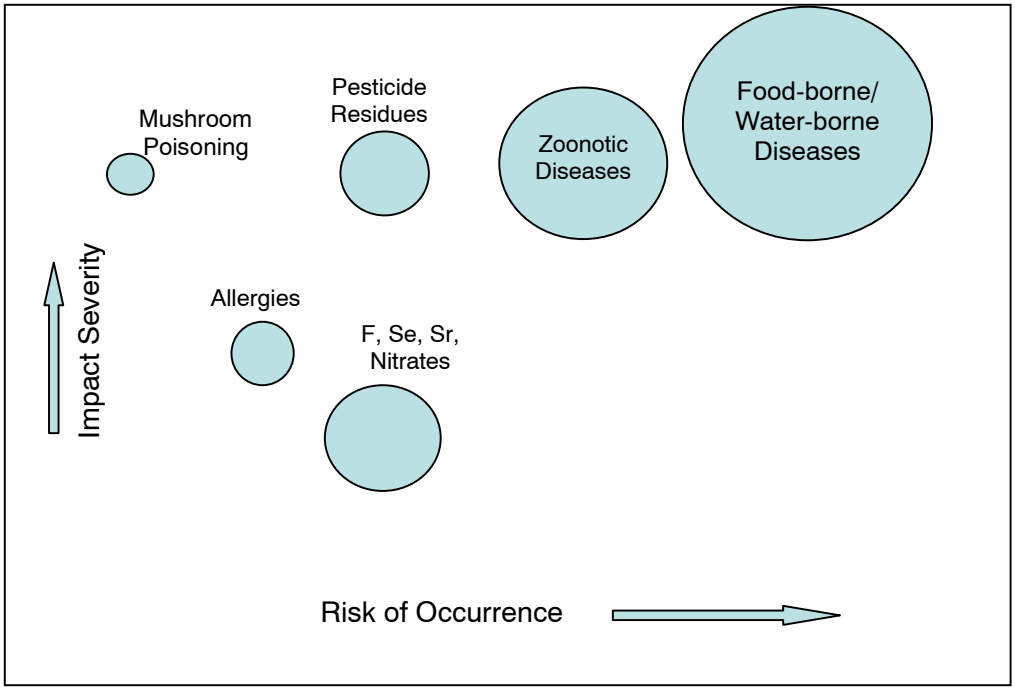
Source: D. Humpal field report.

Figure 2 shows that the most frequently occurring high-severity problems are food- and water-borne diseases, closely followed by zoonotic diseases. Special water supply problems relate to high fluoride, nitrate and nitrite, selenium, and strontium in shallow groundwater in parts of the country and high mineralization rates (hardness) in deeper aquifers. Wild mushroom poisoning occurs annually in Moldova and can be fatal. Food induced allergies are not reported as an important public health concern in Moldova. Finally, little concern on the part of consumers about pesticide residues in domestic foods has been reported.

2.25 The impact and likelihood of occurrence of food safety issues in exports differs from the domestic food safety perspective, because the issues of concern are limited to export products only and the main risk is rejection of goods by the importing country.[28] Main areas of SPS concerns regarding exports are, in order of priority, (i) control of food- and water-borne microbiological hazards, (ii) control of zoonotic diseases, and (iii) pesticide-residue testing (Figure 3). These three should be the principal focus for investments made by public institutions to regulate exports and by private producers and manufacturers to increase their exports. Other issues entail low or moderate risk and impact to exports (see Box 3).

[28] The customs databases of importing nations in CIS states were not examined, and most product rejections on those markets relate either to shifts in regulatory practice, e.g., Romanian adoption of the EU *Acquis Communautaire* in anticipation of their accession in 2007, or diplomatic power plays justified by SPS infractions, e.g., the September 2005 Russia blockade of Moldovan fruit and vegetable exports.

Figure 3: Severity and risk of occurrence of food safety issues from an export perspective



Source: D. Humpal field report.

2.26 The database on pesticide residues is very weak in Moldova, but the general consensus is that Moldovan agriculture has been a very low input agriculture for more than a decade and that pesticide residues should be very low in both livestock and crops. Nonetheless, a public health hazard of acute poisoning could result from packaging failures and leaks in the hundreds of out-of-date and persistent organic pesticides stored in storage sites scattered around the country.

2.27 **Food facilities, environmental codes, and the regulatory environment require upgrading to reduce the food safety and SPS problems caused by food and water-borne diseases.** Major areas requiring attention are building design and construction, water supply and in-plant treatment, industrial cleaning and sanitation, solid and liquid waste management, and personnel hygiene training and supervision. The rate of improvement of the water and sanitation system and of change in human behavior will determine how quickly the incidence of food- and water-borne disease declines. Individual food processing companies can isolate themselves from a contaminated water supply by investing in independent water sources and in-plant water treatment, and they can avoid contributing to pollution loads by investing in wastewater treatment.[29] Individual farm and factory water and sanitation investments will build a foundation for good agricultural practice (GAP) and good manufacturing practice (GMP), leading to HACCP, EUREP-GAP, BRC, and Organic and Fair Trade certification, which will increase consumer and importer's confidence in the products and facilitate market access.

[29] They may realize savings from these investments in water treatment and reuse if (i) water is costly and their processes are water intensive (e.g., fruit and vegetable canning); (ii) water recycling (e.g., sugar extraction) or reuse (grey water use for irrigation) is possible; or (iii) if economically useful by-products can be recovered from process water (e.g., whey water from cheese manufacturing).

Box 3: Key focus areas for export-related food safety

Qualitative analysis suggests the following priorities:

Food- and water-borne diseases remain the most important category of concern for exports and domestic health. Moldova's interest in growing fresh fruit and vegetable exports and in exporting meat and sausage products from mainly imported raw materials, along with nascent dairy product exports, require upgrading public and private water and sanitation systems and major improvements to or rebuilding of outdated processing company infrastructure.

In exports domestic zoonotic disease problems are of concern because they affect the risk ratings applied to the national capacity to detect and maintain compliance with importing country requirements. Sausage and smoked meat processors, even though they use mainly imported raw materials and export mainly to CIS states, will be affected over the medium-term as these states harmonize with EU regulations or if distribution chains become dominated by supermarkets. The avian flu threat presents a new and serious challenge for the whole poultry sector.

Pesticide residues (and veterinary substances) are a high SPS-impact problem in exports because of the zero-tolerance regulations for use of banned pesticides in many markets, combined with the intensified official pesticide monitoring programs in the developed economies. The intensity of enforcement by an importing country or commercial buyer determines the potential detection and impact of this problem, regardless of the low risk to human health in Moldova.

Risk/impact of allergies in exports is moderated by the low volumes involved and the labeling requirements in importing countries for canned foods and confections. Processors using walnuts or other nuts in their facilities should be aware of the tightening special labeling requirements for allergens imposed by most developed economies.

Fluorine, selenium, strontium, and nitrates/nitrites can be readily, although not inexpensively, controlled in the water supply by processing facilities using water treatment. Screening raw material sources is a basic requirement for food processors, especially when they produce foods specifically intended for high sensitivity groups, such as infants and children. Food for children is intensively regulated in all of Moldova's export markets.

Source: D. Humpal field report.

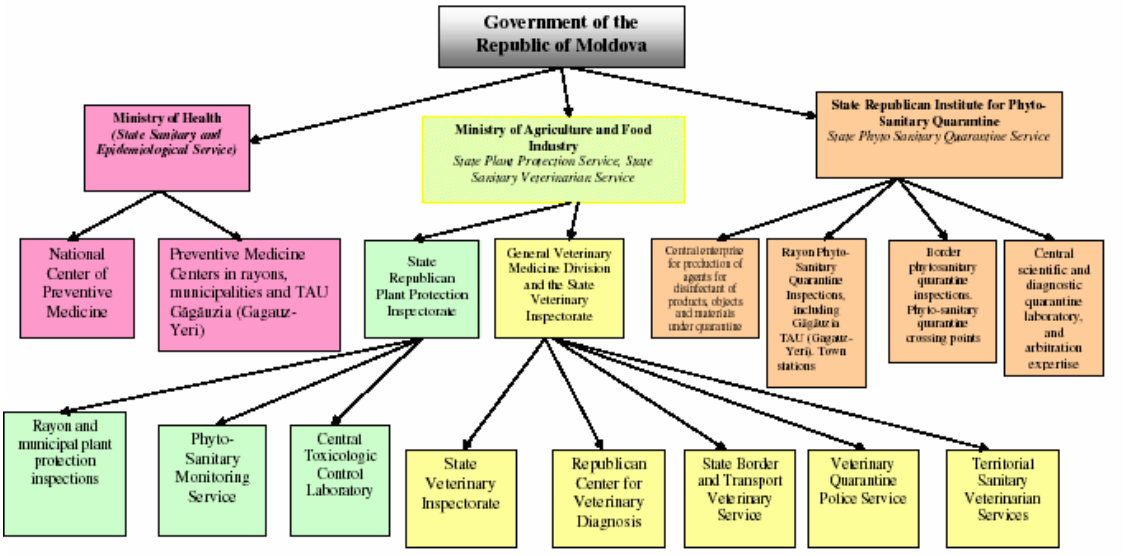
3. INSTITUTIONAL ENVIRONMENT

INSTITUTIONAL AND LEGAL FRAMEWORK FOR SPS MEASURES

3.1 The institutional framework for managing sanitary and phytosanitary measures in Moldova includes several ministries, departments, and agencies (Figure 4). The most important are:

- The Ministry of Health and Social Protection: The State Sanitary and Epidemiological Service (Saniped);
- The Ministry of Agriculture and Food Industry:
  - The State Sanitary Veterinary Service,
  - The Central State Inspectorate for Plant Protection, and
  - The Food Industry and Technical Regulations Division;
- Main State Phytosanitary Quarantine Inspectorate: The State Phytosanitary Quarantine Service; and
- Standardization and Metrology Service, or "Moldova Standard"

Figure 4: Moldova SPS institutions



Source: Field work by Magiera and Perciun.

3.2 Three institutions – the Ministry of Health and Social Protection, the Ministry of Agriculture and Food Industry, and the Main State Phytosanitary Quarantine Inspectorate – have direct responsibilities for sanitary and phytosanitary measures in Moldova. The Ministry of Health is responsible for protecting human health, including food safety. Responsibilities for phytosanitary issues fall to the Central State Inspectorate for Plant Protection within the Ministry of Agriculture and Food Industry, for plant disease and pest control issues within Moldova, and

the Main State Phytosanitary Quarantine Inspectorate, for inspection, quarantine, and certification for products traded across borders. The State Sanitary Veterinary Service handles both internal and trade-related animal and zoonotic disease control, inspection, and quarantine. Finally, the Standardization and Metrology Service, "Moldova Standard," has oversight for all standards in Moldova, including food standards. The responsibilities of each of these bodies, including certification, enforcement, and penalties, are laid out in separate Moldovan laws. Each law is supported by implementing regulations issued by the respective ministry or state agency (See Appendix 4).

Food safety

3.3 **The State Sanitary and Epidemiological Service** (*Law on Sanitary and Epidemiological Protection of the Population* of 1993), in the Ministry of Health and Social Protection, is responsible for protecting public health in Moldova. The law contains general sanitary-epidemiological requirements with regard to buildings, production, processing technologies, raw materials, imported products, potable water, and so on. Within the service, the **National Center of Preventive Medicine (CPM)** is the key agency responsible for food safety in Moldova. The Center develops regulations on food safety and provides training and technical assistance to regional centers. Regional centers monitor food safety, compliance of hygiene rules, and sales of food products. They also inform the public of any food safety problems.

3.4 The CPM also hosts Moldova's **Secretariat for the CODEX Alimentarius**. Moldova was admitted to the CODEX Alimentarius in 1999 and formed its own National Committee in 2001. The Committee consists of 25 senior officials with decision-making responsibilities for food safety. Eleven subcommittees are organized along lines similar to those of CODEX Alimentarius. As will be noted later, the National Committee played a major role in harmonizing Moldova's national legislation and food safety standards with the CODEX Alimentarius. It has published the standards of CODEX Alimentarius in Moldavian, held training seminars on HACCP for government officials, and sponsored numerous national seminars to familiarize officials and the private sector with international food safety standards. Funding for this work was provided by a grant from the FAO.

3.5 **The Food Industry and Technical Regulations Division** in the Ministry of Agriculture and Food Industry deals with technical regulations and quality standards for food and agricultural products. It is responsible for food safety and for the composition of processed agricultural products. According to Ministry staff, these responsibilities differ from those of the CPM in the Ministry of Health in that the latter deals with hygienic issues. In the view of Moldova's private sector, some overlap in and confusion about the responsibilities of these two bodies persists. Within the ministry, seven conformity assessment[30] centers deal with individual types of food items.

Animal health

3.6 **The State Sanitary Veterinary Service** (*Law on Veterinary Activity* of 1993) is Moldova's main institution for animal and fish health.[31] As indicated in Figure 4, the Veterinary Service includes the following institutions: the State Veterinary Inspectorate; the Republican Veterinary Diagnostic Center; the State Veterinary Service for Border Crossing and Transportation; the Local/Territorial Sanitary Veterinary Services; and the Veterinary Quarantine Police Service.

[30] Conformity assessment is a comprehensive process that includes testing, calibration, inspection, and certification to determine whether products, processes, systems, and people meet specified requirements.

[31] A new draft law on Veterinary Services is currently in the interdepartmental review process. This law will likely lead to changes in the structure of the Veterinary Service and create an institution separate from the Ministry of Agriculture.

3.7 Functions of the State Veterinary Service include:

- Monitoring compliance with laws and regulations pertaining to veterinary services;
- Diagnostic investigations of livestock and livestock materials for communicable diseases, vaccination, and quarantine to prevent spread of disease;
- Overseeing compliance with regulations for livestock breeding and with sanitary veterinary requirements for breeding facilities, fisheries, slaughterhouses, facilities for processing and storage of livestock products and raw materials, marketplaces, livestock yards, and veterinary facilities; and
- Tracking morbidity, death rates, and slaughtering of livestock.

3.8 In September 2002, Moldova applied for third-country import status[32] in the EU markets for fish, poultry, and milk products and now awaits a reply.[33] The general perception is that Moldova is not yet ready for third-country status. One major issue is the harmonization of the Moldovan SPS infrastructure with EU norms. Moldova also lacks adequate laboratory equipment and certification and inspection services. Moldova has not been invited to apply for third-country status in beef and pork because of the small herd sizes and because it lacks an animal tracing system.

Plant health

3.9 **The Central State Inspectorate for Plant Protection** (*Law on the Protection of Plant Varieties* of 1996 and *Law on Phytosanitary Products and Fertilizer*) in the Ministry of Agriculture and Food Industry (MAFI) monitors the phytosanitary situation *within* Moldova. The Inspectorate includes regional *(rayon)* and municipal inspectorates, a Phytosanitary Monitoring Service, and a central laboratory for toxicological control. The responsibilities of the Inspectorate include:

- Inspection and certification of warehouses with respect to storage, chemical, and biological substances;
- Comments and registries for issuing import and commercial licenses and records of chemical and biological substances;
- Issuance of quality certificates;
- Sampling and toxicological tests of chemical and biological substances;
- Certification of agricultural producers providing plant protection services; and
- Private sector consultations, forecasting and diagnostic services regarding the application of phytosanitary treatments.

3.10 **The State Phytosanitary Quarantine Service** (*Law on Phytosanitary Quarantine* of 1995) directly reports to the Moldovan Government. It is responsible for protecting Moldova from the introduction of dangerous pests, plant disease, and weeds from other countries. The service enforces phytosanitary quarantine rules during the production, transportation, storage, processing, commercialization, and use of objects subject to quarantine.[34] It issues phytosanitary certificates

[32] A non-EU member country (third-country) must obtain EC approval for exporting certain animal products to the EU. The national authorities of the third country must be able to demonstrate that the animal health situation and the animal health management capacity in the third country satisfy EU requirements before approval is considered.

[33] Although Moldova is a landlocked country, fish are a potentially important product because of Moldova's large number of lakes and streams.

[34] The following goods and services are subject to phytosanitary quarantine: seeds; plants; cereals, fruits, vegetables, tobacco, spices, wool, and raw hides; packaging, packaging materials, and industrial goods; products of vegetable origin that may carry pests, diseases, and weeds; soil; fungus, bacteria, virus, nematodes, acariens, and insects; phyto-pathogenic agents and samples, herbariums, and seed collections; feedstuffs; bedding, hay, straw; wood materials; carpets, artificial fabric, and woven fabric; imported and exported products of vegetal origin, including goods packed in mail parcels, banderoles, and hand luggage; and transport.

for exports, conducts inspections, issues permits for imports, and provides pest and disease identification laboratory services and plant quarantine fumigation services. The service also corresponds with foreign counterparts on multilateral and bilateral plant quarantine issues. The central body of the service is the **Main State Phytosanitary Quarantine Inspectorate.** In addition, it has the following subdivisions:

- Central laboratory for scientific and diagnostic quarantine, identification, and arbitration;
- *Rayon* phytosanitary quarantine inspectorates;
- Inspection for phytosanitary quarantine;[35]
- Town phytosanitary quarantine stations;
- Frontier phytosanitary quarantine inspectorates;
- Frontier phytosanitary quarantine stations; and
- Main production enterprises for disinfection of products, objects, and materials subject to quarantine.

Standardization

3.11 **The Standardization and Metrology Service "Moldova Standard"** is responsible for standards, metrology, and certification in Moldova. The laws governing the activities of the Department include the *Law on Consumer Protection* of 2003, the *Law on Technical Barriers to Trade* of 2000, and the *Law on Standardization* of 1995. In the case of food products, Moldova Standard is responsible for the non-SPS element, while the Division of Standardization and Conformity Assessment in the Ministry of Agriculture has responsibility for the SPS element and for more general technical regulations. The standards are the same for imported and domestically produced goods. Moldova Standard is also responsible for Moldova's implementation of the WTO Agreement on Technical Barriers to Trade (TBT).

3.12 Most of Moldova's standards are transposed from the GOST standards system of the former Soviet Union and from Romanian standards. GOST encompassed some 20,000 standards, and it is estimated that approximately 8,000 of these are used in Moldova today, with some 2,000 considered mandatory. Food safety requirements are often lower in Moldova than those established by the CODEX Alimentarius and other international standards. Veterinary and phytosanitary regulations were equally rigid, even though they were broadly based on OIE and IPPC principles, with provisions that often overlapped GOST rules, guaranteeing duplication of effort and turf conflicts among regulatory agencies.[36] GOST standards in general form an obstacle for market access as they are not recognized in market economies. They also reduce competitiveness in exports because they allow producers little flexibility for following market trends and consumer taste and they involve extensive inspections throughout the production and trade process. The older GOST standards also specify analytic techniques for official laboratories that are often outmoded and unreliable (see Box 4 for a discussion of the main problems of the GOST system). The transposition of the GOST system and standards into Moldovan standards and its present slow rate of revision do not provide optimal food safety and agricultural health protection for the Moldovan population and its agriculture.

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[35] Moldova's Găgăuzia (Gagauz-Yeri) TAU administrative region has an autonomous inspection for phytosanitary quarantine.

[36] Overlap and duplication continue to pose substantial problems in standards and regulations in Russia and in standards and regulations development and trade throughout the states of the FSU. The Russian Federation Federal Law Number 184, dated 27/12/2002, preserves older GOST-standards regulations until they can be replaced by new GOST versions. The same law maintains in place the USSR Veterinary and Plant Quarantine codes until individual provisions are updated during the transition period extending through 2009, or until that period expires.

Box 4: Main problems of the GOST system

Developed under the USSR to serve the planned economy, the GOST standard system is incompatible with the market economy or the international trading system.

GOST standards are highly prescriptive mandatory standards[37] that specified materials, processes, analytic methods and techniques, and final product characteristics, including packaging for all processed products. They were intended to permit almost complete compatibility and interchangeability of domestically manufactured products, and their distribution systems, and to set a single quality standard for each processed product. The rigidity of the system and slow rate of change stifled innovation. Over time, they also often supported the retention of anachronistic technologies, analytic methods, and management practices. In mature market economies, only a small number of standards that concern worker protection, the environment, product safety, and consumer protection are mandatory; most standards are voluntary. This provides the private sector with a large room for technical innovation, new product development and greater product diversity for consumers.

There are many inconsistencies and even contradictory requirements in the GOST standard system. The existence of tens of thousands of detailed, mandatory standards makes it almost impossible for private companies to comply with all the requirements or for government agencies to supervise the compliance.

GOST standards also rely heavily on mandatory end product testing for product conformity assessment and for sanitary or phytosanitary certification. This may lead to duplication of the same tests for the two different certification purposes, or for the same certificate for different shipped lots.

Because companies are subject to multiple inspections by various government agencies, there is plenty of room for administrative rent seeking. The complexity of the standards gives the supervisory bodies great discretionary power, which leads to a high level of arbitrariness in law enforcement. On the one hand, rent seeking behavior by government agencies increases cost of doing business for the private sector (and hurting consumer interest in the end). On the other hand, it encourages the private companies to ignore even the reasonable requirements by paying bribes, thus jeopardizing product and consumer safety and environmental health.

The GOST standards also serve as a technical barrier to the entry of foreign imported products over time, adding a technical layer of protection through dense and often overlapping conformity, sanitary, veterinary, and phytosanitary certification.

Source: World Bank, 2007 (forthcoming); Rybtsov , 2006.

3.13 The private sector may also apply for the approval of a new proprietary standard. New standards for agricultural products are under the authority of joint committees (for example, meat and dairy) set up by Moldova Standard and the relevant departments of the Ministry of Agriculture. If the product involves food hygiene, the technical prescription for the product is also sent to the Ministry of Health for comment. After that, the file is sent to Moldova Standard, which registers the name and number of the prescription (not the process itself). After registration, the product can be manufactured according to the standard.

3.14 **With its accession to the WTO in 2001, Moldova committed itself to applying international standards.** Its policy is to harmonize its standards with those of the European

[37] In the WTO context, mandatory standards are referred to as "technical regulations," while "standard" is used to refer to voluntary standards. "Technical regulations" and "standards" have different implications for international trade. If an imported product does not fulfill the requirements of a technical regulation, it will not be allowed to be put on sale. In case of standards, non-complying imported products will be allowed on the market, but then their market share may be affected if consumers' prefer products that meet local standards.

Union. Yet, the system of GOST standards has not yet been replaced by a system consistent with international standards. Current standards and regulations retain many references to GOST standards. In fact many inspectors keep using GOST standards and manuals for daily work. One reason is the vested institutional interest in their continued use. The other is the enormous amount of work and expertise needed to review the thousands of GOST standards; study the alternative standards of the CODEX, the EU, and other countries; and replace or abolish the old standards. Significantly, a major adjustment of inspection procedures and testing capacities will also be needed to introduce a new and operational standard system.

Certification

3.15 Moldova has two types of certification requirements. The first refers to class certifications (sanitary, phytosanitary, and veterinary) issued by the line agencies responsible for SPS measures. The second refers to certification that products are in conformance (conformity assessment) with Moldova Standard. The Government asserts that certification requirements are identical for domestic and imported products.

3.16 **SPS Certification**. The certification requirements for sanitary and phytosanitary measures are set out in the technical regulations of the responsible ministry.[38] Testing and certification is typically the responsibility of the competent body under the ministry (Table 9).

3.17 **Hygiene Certificate of the State Sanitary-Epidemiological Service.** Hygiene certificates are issued by the National Center for Preventive Medicine. For a domestic producer, the certificate is valid for up to three years, provided the production method does not change. Inspections usually occur once or twice a year. Importers receive a certificate valid only for the shipment concerned. Imported goods are inspected at the customs office of the *rayon* in which the importer is registered. Importers of perishable and other goods may also reach an agreement through which a hygiene certificate, valid for up to three years, is issued to the foreign production site. The goods are stamped with a special stamp indicating they have been produced in accordance with Moldovan requirements. As for domestic products, the Center for Preventive Medicine (and Moldova Standard) inspects production sites.

3.18 Moldova has mutual recognition agreements (MRAs) with CIS countries, Romania, and a few other countries. It recognizes hygiene certificates issued by approved institutions in these countries and by some foreign certification bodies. Negotiations on MRAs with other countries are a priority of the Government. No additional tests are required for imported goods accompanied by hygiene certificates from recognized foreign bodies.

3.19 **Import Permit of the Main State Phytosanitary Quarantine Inspectorate.** This document is only required for imported goods. Prior to shipment, the foreign exporter must send a request to the Main State Phytosanitary Quarantine Inspectorate indicating the goods to be shipped. The Inspectorate issues a preliminary import permit that stipulates the phytosanitary requirements that must be satisfied. Upon arrival, the goods are inspected and tested either at the border or at the central laboratory in Chisinau. If they satisfy the requirements, the preliminary import permit is stamped as definitive. Typically, importers must present a phytosanitary certificate from the country of origin, a laboratory analysis (in some cases), and a certificate of disinfestation or disinfection treatment.

[38] The information in Table 9 and in the text is paraphrased from the Report of the Working Party on the Accession of Moldova to the WTO (WT/ACC/SPEC/MOL/4/Rev.5) and from responses to questions asked by the Committee before Moldova's accession.

Table 9: Overview of sanitary and phytosanitary regulations and certification authority

Rules	Goods/Objects	Authority	Certificate Issued
Food safety requirements (harmonized with CODEX Alimentarius)	Food products	State Sanitary-Epidemiological Service (Ministry of Health and Social Protection)	Hygiene Certificate
Sanitary requirements as part of product standards	Raw materials, machines and equipment that may endanger human health; goods for children; materials and equipment used in drinking-water systems; cosmetics and perfume; soap and detergents; textiles	State Sanitary-Epidemiological Service (Ministry of Health and Social Protection)	Hygiene Certificate
Phytosanitary requirements (harmonized with EPPO)	Products, materials, or objects that could contribute to the spread of pests, diseases, or objects under phytosanitary quarantine	Main State Phytosanitary Quarantine Inspectorate	Import Permit; Phytosanitary Certificate for Export
Veterinary requirements (harmonized with OIE)	Live animals; meat and meat products; milk and milk products; poultry, eggs and egg products; fish and seafood products and raw materials of animal origin; products of animal origin for animal feeding; goods for veterinary use.	State Veterinary Inspectorate (Ministry of Agriculture)	Sanitary Avis; Veterinary Health Certificate

Source: Field work by Magiera and Perciun.

3.20 **Phytosanitary Certificate of the Main State Phytosanitary Quarantine Inspectorate.** This document is only required for goods to be exported. Exporters must submit a description of the consignment, a laboratory analysis (in some cases), and an indication of any required disinfestation or disinfection treatment. The issuance of phytosanitary certificates for exports of cereals requires a portfolio of documents on certification of origin and mandatory execution of the transaction on the national commodity exchange.

3.21 **Veterinary Certificates.** For domestic producers, a veterinary certificate is valid for up to three years provided production methods do not change. The facilities are inspected at random intervals during this period. In addition, every production lot produced must be inspected and issued a veterinary health certificate.

3.22 For imported products, the foreign exporter must first send a request to the State Veterinary Inspectorate. The Inspectorate will then issue a preliminary import permit: the sanitary avis. Upon importation, the importer must present the sanitary avis with the veterinary certificate of the exporting country, stamps from the veterinary authorities of all transit countries, and a quality certificate issued by the producer. Upon arrival, every lot is inspected and tested. If cleared, a veterinary health certificate is issued.

3.23 **Appeals.** Appeals against decisions of the Main State Phytosanitary Quarantine Inspectorate, State Veterinary Inspectorate and State Sanitary-Epidemiological Service can be addressed, in the first instance, to the head of the organization. In the second instance, the importer can file a lawsuit in the economic courts.

3.24 **Conformity Assessment**. Moldova Standard is responsible for general procedures regarding certification of products (conformity assessment). In December 2004, a new list of products requiring conformity assessment was issued. The number of products on the list has been reduced by one-third. Mandatory certification applies to many food products that can affect

life and health, including milk and dairy products, honey, processed fruits and vegetables, coffee and tea, cereal flours and bakery products, pasta, vegetable oils, margarine, prepared or preserved fish and crustaceans, sugar and chocolate confectionary, tobacco products, and alcoholic beverages.[39] Fresh fruits and vegetables are excluded from the list. Meat and meat products were initially included but were removed only a few weeks after the mandatory list was issued.

3.25 For products with both an SPS and a non-SPS component, Moldova Standard issues the certificate of conformity on the basis of the class certificate for the SPS component and its own testing for the non-SPS component.[40] In all cases, class certificates must be issued before the conformity assessment certificate. For a product, such as meat, that no longer requires a conformity assessment certificate, the product must be assessed by the Veterinary Service (veterinary certificate) and Ministry of Health (hygienic certificate) to ensure its safety and compliance with product standards. Fresh fruits and vegetables need only hygiene, phytosanitary, and quality certificates from the supplier.

3.26 According to some interviewees, a number of inefficiencies and problems plague the conformity assessment system. First, the list of products for which conformity assessment is mandatory seems arbitrary, especially now that meat products have been removed from the list. Second, people claim that the certificates in themselves do not guarantee quality and food safety; rather, they only certify that the product was developed or produced according to the standard. Finally, conformity assessment certificates are required only once a year and only on the finished good; yet, producers are required to test their products at each stage of processing using accredited labs. These labs may be either on site at the processing facility or independent. Thus, the conformity assessment certificates appear to duplicate testing already being done by the labs and add little by way of product assurance.

Accreditation

3.27 Moldova's *Law on Product Conformity Assessment* of 2003 established a new accreditation system independent of the standards setting body and of the laboratories and other testing facilities being accredited. Before this, the accreditation system was under the authority of Moldova Standard. The new accreditation system is described below: the **Accreditation Council** (19 representatives, including the National Standardization Body, producers associations, consumers association, scientific and public organizations, Supreme Council for Science and Technological Development, National Confederation of Employers' Associations, trade unions, and so on) monitors and evaluates the efficiency of the activities carried out under the accreditation system, oversees the objectivity and impartiality of the accreditation process, and develops suggestions for improving the existing accreditation system. The Minister of Economy and Trade serves as Chairman of the Accreditation Council. The Accreditation Body is the state enterprise "Center for Accreditation and Product Conformity Assessment." It is a legal entity carrying out its activity based on regulations approved by the Government. It does not have the right to provide services that will be fulfilled by bodies charged with product conformity assessment functions accredited by this body; neither can it provide advice for obtaining or maintaining the accreditation status.

3.28 Accreditation has reportedly been granted to the following:[41]

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[39] See Government Regulation No. 1469 of December 2004 on the "Nomenclature of Products Subject to Mandatory Conformity Certification." (Appendix 5).

[40] This description of the process is inferred from observation and discussion with representatives of the agency.

[41] These figures date from the time of interviews held in September 2005; they refer primarily to accreditations still in force from prior years. (Accreditations for laboratories are given for a five-year period.) New and renewal accreditations were scheduled to begin in 2006.

- Testing and calibration laboratories: 142;
- Product certification bodies: 26;
- Services certification bodies: 6;
- Bodies for certification of personnel engaged in conformity assessment: 1; and
- Quality management certification bodies: 2.

3.29 The Appeal Commission consists of 3 experts: one is selected by the claimant and the other 2 are independent experts appointed by the Accreditation Council. Seven Branch Technical Commissions participate in appraising the activity of the product conformity assessment bodies and carry out the technical expertise if requested by the Accreditation Council.

3.30 The Center for Accreditation now has mutual recognition agreements with CIS countries and several other countries in the region (for example, Turkey). Moldova is a member of several regional accreditation bodies and an affiliate of International Laboratory Accreditation Conference (ILAC) and has applied for membership with the European Accreditation Organization.

MOLDOVA'S COMMITMENTS UNDER THE WTO SPS AGREEMENT

3.31 Moldova applied for membership in the General Agreement of Tariffs and Trade in November 1993 and formally acceded to the WTO in 2001. As a result, Moldova has taken on all obligations of the WTO Agreement on the Application of Sanitary and Phytosanitary (SPS) Measures. Moldova agreed to take on these obligations without transition immediately upon accession.

3.32 The SPS Agreement was negotiated in parallel with the Uruguay Round negotiations on agriculture and reflects concerns that countries might use SPS measures to negate the benefits of reduced tariffs and subsidies. The purpose of the Agreement is to ensure that the SPS measures taken by governments do not result in unfair barriers to trade (see Box 5).

Box 5: The WTO SPS Agreement

The World Trade Organization adopted the Agreement on Sanitary and Phytosanitary Measures (the SPS Agreement) in 1994. The purpose of the agreement is two-fold: to allow member countries to provide the level of food safety and agricultural health (both animal and plant health) they deem appropriate, and to ensure SPS measures do not represent unnecessary, arbitrary, or disguised barriers to trade. SPS measures aim at fulfilling the following goals:

- ✓ Protection of human or animal health arising from risks coming from additives, contaminants, toxins, or disease-causing organisms in foods, beverages, or feedstuffs;
- ✓ Protection of human life or health from risks arising from diseases carried by animals, plants, or products thereof, or from the entry, establishment, or spread of pests;
- ✓ Protection of animal or plant life or health from risks arising from the entry, establishment, or spread of pests, diseases, or disease-carrying organisms; and,
- ✓ Prevention or limitation of damage caused by the entry, establishment, or spread of pests.

The Agreement requires that SPS measures by member countries should be transparent, science-based (by applying international standards or by basing their standards on risk assessment), and nondiscriminatory and should avoid unnecessary interruption of trade.

Source: *The Agreement on Sanitary and Phytosanitary Measures*, World Trade Organization.

3.33 The SPS Agreement is similar but somewhat narrower in scope to the Agreement on Technical Barriers to Trade (TBT). The TBT Agreement refers to mandatory technical

regulations, voluntary standards, and conformity assessment procedures. Moldova made a major commitment under the TBT Agreement to move from a system of mandatory standards to a system of mandatory technical regulations and voluntary standards. The SPS Agreement contains many of the same principles as the TBT Agreement, but only as they relate to sanitary and phytosanitary measures as defined above. Since they are covered by a separate agreement, SPS measures are specifically excluded from the disciplines of the TBT Agreement.[42]

3.34 Some of the Agreement's most important provisions and their implications for Moldova are as follows:

- *Harmonization:* Moldova is encouraged to base its SPS measures on international norms established by the CODEX Alimentarius Commission (CAC), the *Office International des Epizooties* (OIE, World Organization for Animal Health), and the International Plant Protection Convention (IPPC);
- *Risk Assessment:* Moldova may adopt higher standards than those implied by international norms, but these must be based on scientific evidence and a proper assessment of risks;
- *Equivalence:* Moldova must recognize SPS measures of an exporting country if they achieve the same level of SPS protection required in Moldova;
- *Non-Discrimination:* Moldova's standards, control, inspection, and approval procedures for SPS must be no less favorable for imported products than for domestic products and cannot discriminate between exporters.

3.35 **Harmonization of Moldovan Laws**. Before accession, Moldova's SPS institutions were based on those of the former Soviet Union and were in need of significant changes to bring them into conformity with WTO requirements. In the case of its three main laws on sanitary and phytosanitary issues, Moldova simply added amendments to each (see Appendix 4). These amendments are:

- Governmental Decision No. 378 of 1998 for Veterinary Services;
- Governmental Decision No. 697 of 1995 for Phytosanitary Services; and
- Governmental Decision No. 423 of 2000 for Sanitary-Epidemiological Services.

3.36 For the most part, these amendments paraphrase the words of the WTO SPS Agreement and state that Moldova will comply with the Agreement. For example, Article 11 of Moldova's Government Decision No. 423 states that in reference to the principle of non-discrimination "The State Sanitary-Epidemiological Service ensures that sanitary measures shall not generate unjustified discrimination between member-countries of WTO having similar or identical conditions, including the Republic of Moldova and other member-countries of WTO."

3.37 **Harmonization of Standards**. As part of its accession agreement, Moldova agreed to move from a system of mandatory standards to a system of technical regulations and voluntary standards and to harmonize its standards with international norms. Government officials estimate that 90 percent of these standards relate to agricultural products. Thus, the transition towards international norms will involve the development of mandatory technical regulations and voluntary standards for agricultural products. Since this is a major issue in Moldova, it is discussed in a separate section below.

3.38 **Non-Discrimination.** Moldovan officials state that control, inspection, and approval procedures for imports are identical to those for domestic products. Moldova does face a potential

[42] Quality specifications covering such things as age, percentage of fat, color, species, etc., come under the TBT Agreement. SPS measures refer to additives, pesticides, etc., as noted in the text. Measures to protect the environment, consumer interests other than health, and animal welfare do not fall under the SPS Agreement. SPS measures may also apply to industrial products.

problem, however, because GOST-derived standards are generally being applied internally while the Agreement calls for the use of international standards from CODEX, IPPC, and OIE. If Moldova were to block imports of a product because it does not conform to its internal standards, proper risk assessments would be needed to justify the restraint. Government officials seem to argue that Moldova's legal system now uses international standards as the basis for SPS measures, thus eliminating the problem, since products conforming to these standards can be imported under procedures identical to those for other products.[43]

3.39 **International Organizations**. The SPS Agreement requires that WTO member countries participate "within limits of their resources" in the international organizations on which the Agreement is based. Moldova has been member of the CODEX Alimentarius Commission for food safety since 1999 and the *Office International des Epizooties* for animal health since 1993, and it joined the International Plant Protection Convention and the European and Mediterranean Plant Protection Organization (EPPO) in July 2006.

3.40 As noted earlier, Moldova's National CODEX Committee has been crucial to the development of new food safety standards in Moldova and to the harmonization of these standards with international norms. Financing for this work came primarily from FAO. Although the National Committee's Secretariat is still operational, officials report that the work of the Committee is stagnating. Similarly, Moldova's participation in meetings of the OIE has been financed for many years by the U.S. Department of Agriculture. That support has also terminated. With the poor budgetary situation in Moldova, participation in meetings of international organizations will fall significantly, according to some government officials.

3.41 **Transparency**. The SPS Agreement requires members to establish enquiry points for answering questions, provide documents on SPS measures, and fulfill other notification requirements. Moldova's enquiry point for the WTO is listed in Appendix 6 . Also listed are its contact points for selected other Agreements and standards organizations.

3.42 **The SPS Agreement and Restraints on Trade**. The SPS Agreement establishes certain notification requirements and procedures for consultations in cases of SPS-related restraints on trade. One such case involves Moldovan exports. In 2001, Romania banned Moldovan exports of meat and meat products, milk and milk products, and eggs. The products represented 2.9 percent of Moldova's total exports and led to a severe disruption of the domestic market for these products. Ostensibly, the measures were taken as Romania prepared for accession to the European Union. Moldova filed a "Communication" with the WTO expressing its concerns and claiming that the measures against it were contrary to the Agreement since they were taken before Romania had implemented identical measures for its domestic market.[44] Romania and Moldova entered into bilateral consultations, and the measures were eventually rescinded, but only after one year had elapsed.

3.43 Moldova has banned imports of poultry from about 10 countries because of bird flu. It also banned imports of hogs from Romania because of hog cholera. The study team was unable to find notifications of these or other sanitary bans in the WTO.

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[43] An examination of products on grocery shelves indicated that most imported processed products adhere to GOST standards. Observed veterinary border inspection procedures show that a preliminary inspection for processed meat, dairy, processed fish, and animal feed includes physical inspection and review of documentary compliance with import rules. The conformity testing in the exporting country is routinely duplicated in Moldova. Formal rules require a conformity assessment to be bundled with 10 other regulatory documents before the Central State Veterinary Laboratory will conduct its tests and provide a veterinary certificate allowing the product to enter commerce. Imported livestock feeds require phytosanitary import permits in addition to the bundle needed for processed animal products.

[44] See WTO document "G/SPS/GEN/334."

HARMONIZATION AND DEVELOPMENT OF TECHNICAL REGULATIONS

3.44 Moldova's legal system for sanitary and phytosanitary measures has gone through significant changes since the break-up of the Soviet Union. In part, these changes were due to Moldova's accession to the WTO, which requires that Moldova harmonize its SPS system with international norms. Although further changes are in the offing, government officials feel that the Moldovan legal system now provides a general framework for harmonization. The two key laws are the *Food Law* of 2004 and the *Law on Consumer Protection* of 2003. With these two laws in place, the problem now is implementation.

3.45 As noted earlier, the Government of Moldova is committed to the harmonization of its SPS measures with European and international norms and to the adoption of a system of voluntary standards. A strict reading of Moldovan law indicates that both of these commitments should have now been met.

- Under the new *Food Law* of 2004, national food standards are based on international norms, including CODEX Alimentarius and those of the European Union.
- *The Law on Standardization* of 1995 states that national standards are to become voluntary on 1 January 2005. Since that date has now passed, Moldovan standards are now voluntary.

3.46 Although the Moldovan legal framework may reflect its international commitments, many elements of the new system are not yet in place and some appear to be contradictory. Moldovan law calls for the development of new technical regulations during the transition to voluntary standards, for example. *The Law on Technical Barriers to Trade* of 2000 states that technical regulations should be in place by 1 January 2002. *The Law on Standardization* set this date at 1 January 2005, the same date that national standards became voluntary. Until now, however, only limited progress has been made on developing the technical regulations. As a result, Moldova seems to be in legal limbo. Some government officials have stated that the old standards are still mandatory, as laid out in Government Regulation 1469. Others feel that the standards are voluntary and that the Laws on Standardization and Technical Barriers to Trade may require amendment.

3.47 Overall responsibility for developing the voluntary system falls on a committee chaired by the Ministry of Economy and Trade and consisting of ministers and other senior government officials. This committee meets every six months, but it is considered too senior for the highly technical work involved. In addition, Government Regulation (GR) No. 873 of 2004 establishes a National Program for the Development of Technical Regulations, under the authority of the Ministry of Economy and Trade and Moldova Standard, comprising over 100 technical regulations. GR No. 873 lays out responsibilities for technical regulations, but it does not provide an implementation plan. Technical regulations for food and agriculture are the responsibility of the Ministry of Health and the Ministry of Agriculture. Two types of technical regulations are to be developed: horizontal measures applicable to all food products and the sole responsibility of the Ministry of Health, and vertical measures applicable to individual food and agricultural product groups and the sole responsibility of the Ministry of Agriculture.

3.48 Horizontal measures pertain to food labeling, food additives, pesticide residues, food contaminants, and hygienic standards. Each of these fall under the SPS Agreement to the extent that they involve human life and health; labeling requirements regarding nutritional requirements, grades, and so on fall under the WTO Agreement on Technical Barriers to Trade. The Ministry of Health, in conjunction with the National CODEX Committee, has made considerable progress on many of these regulations. Regulations on food labeling and food additives have already been

formally approved by the Ministry of Health.[45] Regulations on food contaminants and hygienic standards are in draft form and are nearly completed. All technical regulations were developed in accordance with CODEX Alimentarius and directives of the European Union.

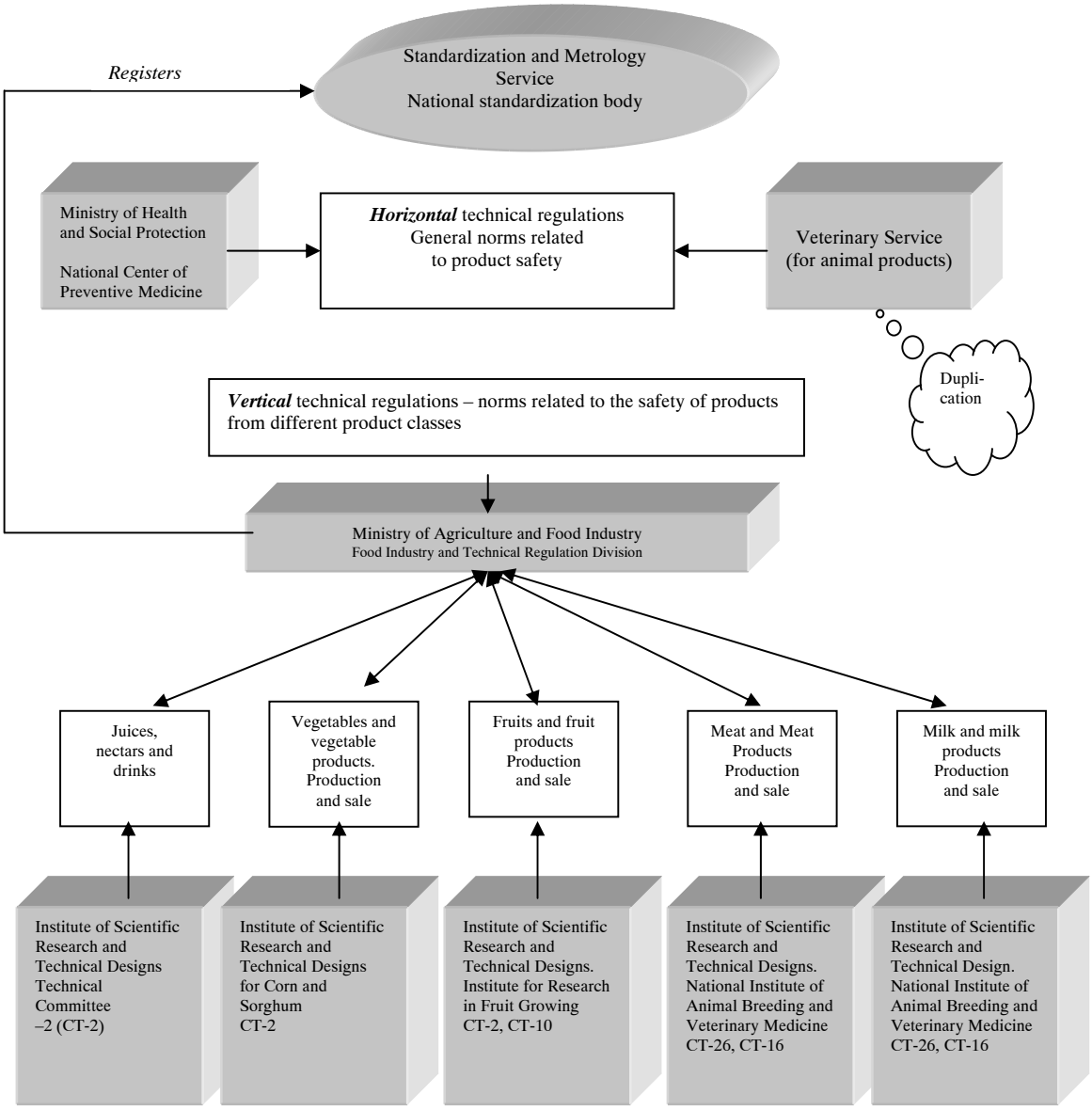
3.49 Progress on the development of vertical standards for food and agriculture has been much slower, and some observers feel that, at the current pace of development, it may take ten years to complete the process. The National Program includes 31 regulations for different types of agricultural products. The Food Industry and Technical Regulation Division in the Ministry of Agriculture has the responsibility for developing these regulations and has entrusted some of the effort to research institutes specialized in the products (see Figure 5). Government officials report that progress is slow progress because they lack the funds and services (including computers and internet access) needed to obtain and translate the full set of EU documents on which to base the harmonization program. Some 1800 EU documents cover the relevant EU laws, directives, decisions, technical regulations, and quality indicators. At minimum, the ministry needs 200 of these documents in both English and Moldavian, and it estimates the total cost of the harmonization program for these vertical standards to be $220,000. Some of the needed translations can be obtained through cooperation with Romania.

3.50 The new technical regulations will contain parameters on food safety and human health and will be mandatory. Delays in developing the technical regulations have resulted in other legal uncertainties in addition to that mentioned above. For example,

1) If the old mandatory system of standards is still in effect, producers would seem to have no option but to continue to apply those transposed from GOST or to apply for a new standard with Moldova Standard. This would seem to handicap those producers wishing to produce to European standards.
2) The Government has introduced some horizontal (labeling and food additives) measures. It would appear that producers must meet these measures, in addition to those transposed from GOST.
3) CIS states have a standards commission, but members are not obliged to harmonize their standards, leading to divergence that is often protective of domestic processing industries; for example, a country my institute its own technical parameters for producing a baby food that once had a common parameter in use throughout the FSU.

[45] The government regulation on food additives is now in need of amendment.

Figure 5: The process for developing technical regulations



Source: Field work by Magiera and Perciun.

INSTITUTIONAL CAPACITIES AND WEAKNESSES IN MANAGING FOOD SAFETY AND SPS

3.51 Institutional capacity in SPS is shaped by the national legal framework and public and private capacity to regulate and manage food safety and animal and plant health. The legal framework is brought to life by the actions of the government bodies charged with its enforcement and the private bodies responsible for meeting standards and market requirements in their day-to-day activities. At the end of the day, the general public as consumers must be responsible for the final stages of the safe handling and preparation of the foods and beverages they buy, prepare, and consume. The role of the public sector is to help ensure the basic safety of

the food supply; to support private entities with adequate regulations, public infrastructure, and services; and to inform and educate the public about food safety risks. In the areas of plant and animal health, the public sector monitors and identifies outbreaks; takes quarantine and curative actions; underwrites research into plant and animal health problems; and works with producers, processors, and suppliers to address these problems.

Institutional capacities

3.52 **Staffing.** Moldova's agencies with responsibilities to implement food safety and SPS laws have staff experienced in inspections, quarantine operations, and laboratory analyses, organized to enforce transposed GOST standards, veterinary, and phytosanitary regulations, and, in some cases, WTO and/or EU-harmonized standards. Table 10 (derived from interviews with department heads) provides an overview of staffing in the main food safety and SPS areas. The headings in the table cover human, livestock, and crop health regulatory areas, including policy, management, laboratory, and field staff from several agencies. These staffs are highly decentralized with very few personnel in central policy and administrative offices.

Table 10: Distribution of food safety and SPS inspectors in Moldova

Service	*Total*	*Inspectors in* **Rayons**	*Inspectors at Border Posts*	*Percentage at Border Posts*
The State Sanitary and Epidemiological Service*	229	215	0	-
Sanitary Veterinary Service**	2,766	2,328	167	6%
State Plant Quarantine and Protection Service***	367	175	108	29.4%

Source: This material derives from interviews with service chiefs undertaken in the course of this study.
Notes: * Includes inspectorate staff only in SPS field and laboratory personnel from 3 services.
**Includes staff from 6 services.
***Include staff from 5 services and their subagencies.

The animal health service has the largest staff, and some observers argue that it is too large from a financial and technical perspective. Table 11

3.53 Table 11 shows that the animal unit to staffing ratio is on the low side of the examples presented, comparable to that of Croatia. Among Moldova's 2,776 veterinary staff, however, only 1,289 are real veterinarians. The rest are technical staff, giving Moldova an animal unit to veterinarian ratio more in line with that of countries with similar livestock biomass[46] and suggesting the technical staff in the service is too large. Moldova is considering a draft law to restructure its veterinary service, reassigning some staff to head quasi-private animal production centers. The opportunity should be seized to rationalize staff via reassignment and to achieve some public sector staff reductions through privatization of veterinary services.

[46] T.W. Schillhorn van Veen (2004) uses different methodology to compare veterinary livestock units to farm animal veterinarians in 27 countries throughout Eastern Europe and the FSU and arrives at a figure for Moldova of 789 VLU/FAV. He also suggests that a low-cost, labor-intensive veterinary system (approximately 1000 VLU/FAV) in the short-term is in accord with the current supply of veterinarians for countries in the region. The methodology for determining the VLU is not provided in that study.

Table 11: Comparison of veterinary staff to animal units in 2004[47]

Country	*Veterinary Staff*		*Animal Units*	*Animal Units/Vet Staff*	*Animal Units/ Veterinarian*
	Veterinarians and Technical Staff	*Veterinarians*			
Moldova	2,766	1,289	785,290	284	609
Slovenia	1,119	921	700,507	626	761
Slovakia	1,856	1,777	1,070,355	577	602
Croatia	4,127	2,784	1,073,055	260	385
Switzerland	2,380	2,220	2,189,222	920	986

Source: OIE, 2005; FAO, 2005; calculations were undertaken in the course of this study

3.54 **Border Posts.** Moldova is a major through-point on the East-West highway routes between Europe and Ukraine and Russia. Its main highway border posts and central customs terminal operate on a 24-hour a day, seven-day a week schedule. Veterinary staff of the State Veterinary Inspectorate on Borders and Transport operates truck tire disinfection stations as well as physical cargo inspections and document checks. The staff of the Border Phytosanitary Quarantine Inspectorates do physical checks, determine if load fumigation is needed, and supervise destruction of pest- or disease- infested products. The major western border-crossing station visited (Leuseni) is well-organized, with all represented services linked locally to the customs computer server. This permits rapid load, import, and sanitary or phytosanitary certificate verification and preliminary clearance by each technical office. Neither the veterinary nor the phytosanitary inspectors are linked by computer to their headquarters or central reference laboratories, however; communication is by telephone or fax, and samples and inspections are logged manually into ledgers. Transported samples are relogged manually at central laboratories, and the results of analyses performed on the samples are also recorded manually in ledgers and files. While substantial care is taken to retain sample integrity and documentation, computer links to central laboratories and central inspectorates would permit better management of product, country of origin, and volume sampling work programs and of work loads.

3.55 Moldovan Customs software upgrade is an opportunity to modernize SPS work and communications. Moldovan Customs is upgrading its Asycuda World software to a new Border Module developed in conformity to Government Decree No. 808 of 9 August 2000. Each technical service is required to finance the upgrades to its computer hardware, network connections, and operating systems to permit installation of this software. Technical services should use these upgrades to determine how they may be able to piggy-back their electronic communication needs onto the upgraded bandwidth that the new customs system requires.

3.56 The Border Phytosanitary Quarantine Inspectorates has a facility at Leuseni within the customs zone that contains an old reference collection of pests and taxonomic keys, but it is overloaded at times by the volume of cereal, feed, and fruit and vegetable imports requiring inspection, and it needs updated sampling and identification aids. Inspectors have visited facilities in the United States that use digital imaging and remote identification linked to national pest identifier laboratories and to automated identification and taxonomic keys supported by software

[47] Calculations use FAO live animal statistics from 2004 and apply the following animal unit conversion factors: cattle (1), pigs (0.4), sheep and goats (0.1), poultry/chickens (0.005), turkeys (0.018), and horses (2). The figures do not include ducks, geese, rabbits, asses, dogs, and cats, because comparable data could not be obtained for all countries.

such as Lucid3.[48] Design and installation of such a system at Leuseni and other major border stations should be done only if improvements are made to the facilities, instrumentation, and computerization of the Central Laboratory for Scientific and Diagnostic Phytosanitary Quarantine, Identification and Arbitration Expertise Laboratory, in Chisinau, and if linkages are made to other national and regional identification expertise. A more in-depth review of the work loads and analytic and identification needs of border posts, *rayon*-level identification capacity, and the central laboratory to support plant quarantine operations is a prerequisite to this type of support, along with an alignment of practice to permit definitive release of plant cargo at the port of entry, rather than at the terminal customs facility in Chisinau.

3.57 **Food Safety and SPS Laboratories.** Moldova is endowed with public health, veterinary, and plant protection and quarantine laboratories from the center to the *rayon* level. Private laboratories are located in processing companies to support product and process certification. Laboratories are backed with annual calibration services from Moldova Standard and five-year laboratory accreditation from a Laboratory Accreditation Center recently separated from Moldova Standard.

3.58 Moldova has a series of central laboratories intended to serve as reference laboratories at which confirming and definitive diagnoses and analyses are done; standards collections are maintained; methods are tested, adapted, and disseminated; and quality-control programs for related laboratories are developed. These laboratories have strong professional leadership and deep experience with GOST and FSU-era analytic and diagnostic methods. Facilities upgrades, equipment procurement, adoption of modern high sensitivity and reliability methods, and computerization are taking place at some central laboratories important to food safety and SPS, notably:

- The National Institute of Standardization and Metrology's Food Products Testing Laboratory;
- The National Center for Preventive Medicine's Central Sanitary-Hygienic Laboratory and the Central Laboratory of Sanitary Microbiology; and
- The State Center for Certification and Approbation of Phytosanitary Means and Fertilizers.

3.59 Other important central laboratories are staffed with competent professionals and technicians skilled in the classical methods of microbiological, serological, parasitological, and radiological analysis; their facilities are deteriorating, however, and they must rely almost entirely on outdated manual record keeping, lack computers and internet access, use outdated GOST physico-chemical methods of low to very low sensitivity and reliability, and have low to no capacity to analyze samples for pesticide or veterinary drug residues. Such laboratories include the Republican Veterinary Diagnostic Center and the Central Laboratory for Scientific and Diagnostic Phytosanitary Quarantine, Identification and Arbitration.

3.60 **All central laboratories suffer from problems common to older FSU-standard facilities**, such as**:**

- Use of floor, wall, and some work-bench materials (wood, plaster, linoleum) that are difficult to seal, maintain, clean, and sanitize;

[48] Lucid3 software distribution is supported free of charge by the Centre for Biological Information Technology (CBIT), The University of Queensland, Brisbane, Australia. The Lucid central website can be accessed at www.lucidcentral.org. Mention by name should not be interpreted as an endorsement of this software by the World Bank. Average costs of purchase and installation of hardware and software for remote identification and digital imaging systems is about $25,000 per location, according to United States Department of Agriculture (USDA) sources.

- Inadequate emergency eye and body showers for decontamination and dilution of chemical and reagent spills;
- Inadequate designs for solid, liquid, and radiological waste containment, treatment, and disposal; and
- The need to improve biosafety chambers and associated sample handling to permit less risky handling of highly-infectious diseases. None of the Moldovan facilities visited had laboratory space meeting WHO or OIE biosafety levels for handling highly pathogenic strains of aerosol-transmitted viruses, such as hantaviruses or avian flu.

3.61 These observations are not a call to rebuild and reequip all central laboratories or all space in all laboratories; rather, they point out the need for Moldova to develop a phased strategy for public laboratory modernization and improvement. This strategy should be based on an examination of its actual and projected diagnostic and analytic needs across the food safety and SPS arenas. Outsourcing low-volume tests to laboratories with established capacity should be part of the overall strategy. Consolidating functions may also permit faster and more sustainable modernization of diagnostic capacity. Rationalization of sampling, surveillance, and diagnostic capacity is important to obtain EC recognition of state bodies as competent authorities to certify animal and plant products for export.

3.62 **Public laboratories also vary greatly at municipal and *rayon* levels.** The central labs for Preventive Medicine, veterinary diagnostics, and plant quarantine are represented at municipal and *rayon* levels. Laboratories in some of the large municipalities, especially those for Preventive Medicine, appear to have benefited from the decade of administrative consolidation, acquiring some new equipment and methods. These labs suffer from very tight budgets for consumables and operations and maintenance, however. Veterinary diagnostic laboratories in smaller municipalities share the same budget and operating problems and occupy much older facilities, some of which do not meet basic standards in building materials.

3.63 Laboratory infrastructure starts crumbling beyond the major towns, sometimes literally in the distant rural *rayons.* These laboratories serve primarily as surveillance facilities, providing information to public health and veterinary officials and *rayon* council governments, and as supports for plant quarantine inspections and fumigations. In these rural *rayons* the CPM laboratories are usually the best equipped but undertake a reduced scope of work compared with large municipalities, focusing on microbiological and parasitological analyses and a simplified set of physico-chemical analyses limited to key product and environmental indicators (heavy metals, nitrates, sulfates, and so on). Veterinary labs maintain microbiological, serological, and physico-chemical capacity, but for a reduced set of diagnostic analyses. Many diagnostic tests could be performed by private veterinarians, with state support and supervision, if needed. Plant quarantine labs at this level are very rudimentary, limited to sampling equipment, pest identification keys, and one or two microscopes.

3.64 **Laboratories in municipal markets need rethinking.** Open markets are an important feature of food distribution in all parts of Moldova. Municipal open-market laboratories are branches of the municipal or *rayon* veterinary laboratories. They are referred to as market Sanitary-Veterinary Expertise Laboratories because they do mandatory inspections of fresh and processed food products before vendors are allowed to sell them. On the other hand, CPM staff is also legally authorized to inspect vendors' stalls and products. In practice, this means vendors pay fees to two food safety authorities before selling their food products. In many countries, the veterinary service is responsible for ensuring the safety of meat and meat products at the abattoir level and meat at processing and storage facilities. The public health authorities then take responsibility for inspection and surveillance of food products as they enter consumer markets. Moldovan authorities should consider restructuring municipal laboratories to place them and their

staffs under the authority of the CPM to avoid duplication of effort, to facilitate matching inspection efforts with food safety risk, and to reduce the cost of doing business for small vendors. Moldovan officials seem to believe that veterinary inspection in markets is necessary because of the existence of informal markets, but the necessity of such a program should be based on risk assessment.

3.65 Generally, a more risk-based approach to inspection and surveillance should permit better separation of roles between animal and plant health inspectorates and laboratories and those of the CPM along the supply chain. The current budgetary constraints of the individual services should be taken as an opportunity to reduce overlaps of authority and duplication of investment in personnel, facilities, and equipment, thus leading to consolidation of inspection services in rural municipal markets.

3.66 **Private Laboratories.** Larger Moldovan food and beverages agribusinesses have their own raw material, process control, and quality assurance laboratories. Examples of such companies include wineries, fruit and vegetable canneries, meat processors, and milk and cheese manufacturers. Companies that sell primarily on the domestic and CIS markets have GOST-level laboratory facilities and methods, whereas companies that sell substantial quantities to countries outside the CIS and have buyers requiring HACCP safety plans usually have laboratories that meet basic EU requirements. These laboratories generally have better basic infrastructure than do the state's central laboratories. The laboratories of the larger companies are accredited with the Moldovan Accreditation Center. State laboratory tests are still required for harmonization and certification purposes, however.

3.67 The private food safety and SPS laboratories are few in number. Most private sector food safety and certification firms, such as SGS and CAMIB, rely on their regional laboratories outside Moldova for analytic services. The creation of state enterprises intended to self-fund their operations from fees charged for services, such as the State Center for Certification and Approbation of Phytosanitary Means and Fertilizers, is pragmatic from the standpoint of a thin public budget but troubling from the perspective of regulator independence; it risks creating vested interests in perpetuating mandatory regulations and lengthy procedures and reduces the marketplace for private laboratory services.

Institutional weaknesses

3.68 The food safety and SPS institutions should be set up in such a way that human and agricultural health can be protected effectively and cost efficiently for both the public sector and the private sector. The biggest deficiency of Moldova's food safety and SPS system are its **layered and duplicative regulations and inspections**. Overlapping authorities among the concerned ministries and among the agencies at the central, municipal, and *rayon* levels and repetitive laboratory testing and certification requirements are wasteful of both regulatory and private sector resources. These layered and duplicative inspection patterns increase public and private costs without adding gains in food safety, agricultural health, or product quality.

3.69 **Legislative changes outstrip public and private implementation capacity.** The Moldovan government, in its zeal to harmonize its fundamental laws with the EU and other market economies, has failed to evaluate the capacities of both the public and the private sectors to respond before enacting fundamental shifts. A requirement in *the Law on Food Safety,* for example, is that all food processors develop and implement HACCP in their facilities by the end of 2004. Most food processors in Moldova needed to rehabilitate or rebuild their manufacturing facilities to meet EU or North American good manufacturing practice (GMP) levels as a precondition to designing and implementing HACCP systems. Moldovan authorities ignored the investment costs necessary to rehabilitate the vast majority of food processing establishments in

the country. The deadline has been delayed until 2007, but many Moldovan industries will be unable to meet this date as well.

3.70 **Scientific risk assessment and economic analysis are essential to the establishment of an effective and efficient food safety and SPS management system.** Risk assessment involves the identification and characterization of hazards, evaluation of likely exposure to the hazard, and an estimate of the adverse effect of exposure. Economic analysis for food safety and SPS management mainly involves cost-benefit analysis. Both risk assessment and economic analysis should play a role at various levels of decision-making in the food system. Moldova has limited expertise in these areas, however, and external assistance is needed to build up its capacity.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Moldova is naturally endowed with rich resources for agricultural production, and agriculture plays a vitally important role in its economy. As the country gradually moves away from the shocks caused by the disintegration of the Soviet Union and continues reforms toward a market economy, agriculture will benefit from the improved investment climate and continue to recover and grow. As a small country with comparative advantage in the production of many agricultural products, Moldova has much to gain from expanding its agricultural trade. To this end, the need is pressing to optimize the institutions, strengthen the technical capacities, and improve the infrastructure for SPS management.

4.2 The prominence of the issue is reflected in Moldova's Poverty Reduction Strategy, which gives high priority to the development of a market-based trade and institutional framework for agriculture. This framework will include the harmonization of legislative acts regarding standardization and the facilitation of the accreditation process for enterprises and laboratories in line with international standards.[49] The goal is to upgrade Moldovan SPS institutions to the levels necessary to increase Moldovan exports to its traditional markets in Romania, Russia, and other CIS countries and, if feasible from a cost/benefit viewpoint, to new markets in western Europe and beyond.

4.3 It should be pointed out that such system-level reform will have long-term, far-reaching impact on the country's food safety and on the development of its agro-food sector. The reform also involves many stakeholders and multiple agencies within the government, each with its own objectives and priorities. Therefore, such a process is very different from the day-to-day operation and existing food safety and agricultural health system. (See Box 6 for a description of various functions in food safety and agricultural health management.) A clear vision, careful planning, and strong leadership will be crucial to the success of the reform.

4.4 This chapter summarizes areas in Moldova's food safety and SPS management processes that need strengthening or improvement, and specific actions are recommended accordingly. An action matrix is provided at the end of this chapter (Table 12), and the cost estimation for these actions can be found in Appendix 7 . The implementation will cover a period of 5 to 6 years, depending on the pace of institutional reform and the availability of funds. Institutional reform is required in advance of major investment.

4.5 **Setting up a coordination unit.** To improve coordination among various agencies involved in SPS management and to ensure effective implementation of this action plan, it is recommended that a coordination unit be established that includes a chief coordinator and contact points from MOH, MAFI, MET, and Moldova Standard. This unit will determine the exact scope of work for each action (including drafting terms of references for consultancy), facilitate inter-agency resource and information sharing, and provide quality control through effective monitoring and evaluation over the TA activities. It also has the potential to evolve into a longer-term interagency consultation mechanism for food safety and SPS management issues.

[49] See Moldova, Government of, 2004.

Recommended action

1. *Establish a coordination unit consisting of a chief coordinator and contact points from various government agencies involved in SPS management.*

Box 6. Functions to be performed in managing food safety and agricultural health

Policy making roles are different in a reform process and in ongoing business.

A **reform program**, such as replacing a GOST-based system with a system based on international standards, is costly and can take 5 to 6 years, including changes in division of responsibilities of ministries and services. Such a program requires decision-making by the Prime Minister, the Cabinet, and the parliament on principles of the reform and on a plan of action. Given the technical and political complexity of the issues, a task force of high-level professionals, reporting to the Prime Minister and with a clear mandate, will be required to act as the main engine for the work expected of the various ministries and agencies involved. Also needed in the process is government decision-making on funding successive steps, another effort requiring close cooperation of the task force with the Ministry of Finance and donors.

Policy tasks in **ongoing business** carried out by various ministries include dealing with day-to-day and year-round risks, decision-making on inspection programs, and targeted interventions. It also involves decision-making on volume and priorities in the standards-setting process (with risk assessment performed by different units). Policymaking is only effective if it includes decision-making on funding the capacities needed to implement laws and policies.

Implementation is the ongoing business of inspection, surveillance, enforcement of rules, and certification. These tasks fall to inspection services, surveillance units, laboratories, and law enforcement entities. In some countries, such as Lithuania and Canada, a single agency has been established for conducting food and veterinary controls. In other countries, the duties are implemented by various agencies, an arrangement requiring clear delineation of responsibilities and mechanisms for coordination.

Evaluation is the ongoing business conducted by the government's auditing units and, at times, by special committees.

Source: This summary derives from information gathered for and presented in this report.

4.6 **Adoption of international standards.** The Government has made harmonization of its food and agricultural standards with international norms and the development of a new system of technical and voluntary standards priorities. This process is necessary not only to meet Moldova's obligations to the WTO; it is also a response to the mounting economic pressure posed by changing requirements instituted by Moldova's trading partners. A difficult choice facing Moldova is the identification of realistic operational targets for adopting international standards. Since Moldova cannot expect to become an EU member in the foreseeable future, adoption of the *Acquis Communautaire* is not an option. The resources needed for that, as evident from the experiences of Lithuania (Box 7) and other new EU member countries, would be far beyond the reach of the Moldovan Government, and the expected support from the EC under its "Neighborhood Partnership Program" will be much lower than that available to EU accession countries under PHARE and SAPARD. More importantly, because of the low level of development of Moldova's food sector, the high cost for upgrading small enterprises to meet Common Market requirements would force a large part of the sector to close down. Adoption of international and EU standards and regulations, therefore, must be selective and sequenced in a long-term perspective, especially for the large informal segment of the domestic market. Priorities for adopting international standards would be products for which upgrading is required to participate in international markets and products and production methods representing threats to human and agricultural health. The pace of modernization will depend on the resources available to the Government and the private sector. In other words, priorities should be based on opportunities, costs, and risks.

4.7 **Institutional Restructuring.** Moldova is a small country with limited resources, which it must allocate carefully if it is to develop an SPS system that provides adequate food safety and supports a modern economy with a vibrant trade sector. The SPS institutions in many countries have developed over the years in a somewhat ad hoc manner and without much regard for cost-benefit analysis. As new issues or problems develop, new layers of bureaucracy are added – along with new sets of regulations and overlapping and conflicting institutional responsibilities. This is not only inefficient, it is also confusing.[50] In recent years, several countries – Canada, Denmark, Great Britain, Ireland, and Lithuania among them – have consolidated certain functions of their food safety systems to make them more efficient and effective.[51]

Box 7: Lithuania's transition of its SPS system

Lithuania has actively sought integration with European and global markets since independence from the Soviet Union in 1990. It joined the WTO in 2000 and became a member of the European Union in 2004.

Great efforts are being made to improve food safety and SPS management in Lithuania to meet EU accession requirements and fulfill its obligations as a member of the WTO. Major achievements include:

- ✓ Full transposition of the EU *Acquis Communautaire* into domestic legislation.
- ✓ Reorganized and streamlined administrative framework for food safety and agricultural health, with very clear division of responsibilities among all the agencies involved; a State Food and Veterinary Service (SFVS) created to serve as the official food control agency.
- ✓ Necessary administrative capacities built up.
- ✓ HACCP system introduced in all food establishments.
- ✓ Consolidation of the laboratory system; for instance, the number of labs under SFVS was reduced from 50 to 10, with further consolidation expected.
- ✓ Modern, effective border control.

The EU provided tremendous financial support and technical assistance for Lithuania's transition, channeled mainly through PHARE and SAPARD. PHARE focused on institutional reforms for accession, funding standards harmonization and institution building, while SAPARD provides funding for priority areas in agriculture and rural development, such as rural infrastructure, investment in agricultural holdings, and improvement of agro-processing enterprises. From 1997 to 2003, PHARE allocated roughly 40 million euros (MEURO) to Lithuanian agriculture, of which nearly 30 million was used for SPS-related projects. Below are a few examples of SPS projects funded by PHARE.*

- Assessment of needs relating to veterinary and phytosanitary control, 0.15 MEURO
- Veterinary and phytosanitary control, 1.7 MEURO
- Veterinary and phytosanitary border-control measures, 3.5 MEURO
- Strengthening and enforcement of EU food control system, 3 MEURO
- Strengthening of control of infectious animal diseases in Lithuania, 6.11 MEURO
- Strengthening of food safety control and food control laboratories, 2.9 MEURO
- Strengthening implementation of policies and procedures for plant protection and plant variety identification, 1.47 MEURO

* About 50 percent of the budget for these projects was cofinanced from Lithuania's national budget. The amounts listed here are only the portion funded by the EU.

Source: Interviews with Lithuanian authorities on food safety and agricultural health.
Notes: PHARE – "Poland and Hungary: Assistance for Restructuring their Economies"
SAPARD – "Special Accession Program for Agriculture and Rural Development"

[50] In the United States, for example, 15 government agencies have some role in food safety. The U.S. General Accounting Office, in its testimony before the U.S. Senate in 1999, reported that three government agencies had responsibilities for oversight of chemical residues in food products. As a result, chemicals posing similar risks are treated differently because they come under different laws and regulations.

[51] None of these countries has conducted formal analysis of the result of the consolidation, but officials in these countries believe that the costs of consolidation have been or will likely be exceeded by benefits. See "Food Safety: Experience of Seven Countries in Consolidating Their Food Safety Systems," US Government Accountability Office, GAO-05-212.

4.8 The general trend for agro-food systems in OECD countries is to delineate tasks between health and agricultural authorities and to separate responsibilities between risk assessment and risk management and between standards setting and food safety control (see Box 8 for a discussion of avoiding conflict of interest in food safety management). Examined from this viewpoint, the organization of the Moldovan public services engaged in managing food safety and SPS requires adjustment. Moldova has many institutions involved in food safety and SPS management in spite of severe budgetary limitations.[52] Overlap of responsibilities often leads to repeated inspections. In order to make better use of scarce public resources and reduce the costs for the private sector, Moldova may wish to define more clearly the responsibilities of each agency and eliminate duplication, overlap, and other inefficiencies. One particular way to achieve that is by creating a single authority for food safety that combines the food control functions of the Ministry of Agriculture, the Ministry of Health, and Moldova Standard.[53]

Recommended action

2. *Identify areas of overlap and gaps in responsibilities among agencies managing food safety; assess the best option for Moldova, a single agency for food safety or a multi-agency structure with improved alignment among the present services and clearer definition of the roles and responsibilities of each agency; and make a plan to implement the new structure.*

Box 8: Avoiding conflict of interest in food safety management

Conflicts of interest can undermine the credibility of food safety and agricultural-health management systems. Three examples can illustrate this point. A basic issue in food safety is the potential conflict between supporting producers and protecting consumers. When functions are in one institution, there is risk of a crisis in consumer trust, especially in the event of a food safety hazard. Because of this, in virtually all countries these functions are assigned to the Ministries of Agriculture and Health, respectively.

A second issue is the desirability of a division of responsibilities within Government between units in policymaking, implementation, and evaluation. Inspection services should not set policies but should only implement them, and management of food safety and agricultural health should be independently evaluated.

The third issue is the separation of the roles of risk assessment and risk management in standards setting and adoption of measures. Risk assessment should be independent and science-based; it is often charged to specialized teams in research institutes. Risk management is a function for government agencies with responsibility to decide what risks are acceptable and what should be done in the event of a calamity. A special and also separate role is risk communication, because transparency is needed to maintain consumers' and trading partners' trust in regulators.

Source: This summary derives from information gathered for and presented in this report.

4.9 **Economic analysis and risk assessment** are the two most important crosscutting issues in SPS policymaking and management. Economic analysis, particularly cost-benefit analysis, is especially useful considering the scarce resources and the numerous capacities necessary to meet various SPS requirements. For instance, Moldova has expressed interest in obtaining third-country status in the EU markets for fish, animal, and dairy products. The EC Food Security Program (see Appendix 8) already provides assistance in some of these areas, but it remains unclear how these investments should be ranked with others in terms of cost-benefit relationships.

[52] The staff of the central office of the Ministry of Agriculture was recently cut in half, from 168 to 84.

[53] It is our understanding that the FAO may already have provided advice in this regard.

4.10 Risk assessment is essential to the management of food safety and agricultural health. Standards setting, design of inspection and surveillance programs, and quarantine measures should all be based on risk assessment. Currently Moldova lacks capacity in risk assessment. A core team with risk assessment expertise should be built with external assistance.

Recommended actions

3. *Assess Moldova's competitiveness in fish, dairy, and livestock products to determine the potential benefits of investing in third-country status for these products.*
4. *Conduct cost-benefit analysis of current livestock investment strategies of the government and donors.*
5. *Provide assistance to develop and train a core group of risk assessors.*

4.11 **Harmonization of the regulatory system.** A major part of Moldova's primary legislation dealing with sanitary and phytosanitary measures has already begun to converge with international and particularly European legislation. Thus, the task now is to develop technical regulations and voluntary standards related to SPS and food items. This is a huge task. Existing GOST rules must be reassessed for compatibility with international standards principles and whether they contribute to market access and private sector development. Ultimately, these rules must be abandoned, replaced, or changed to voluntary standards. New bylaws based on international standards principles and regulations (when and where benefits exceed costs) must be developed. The operating implications of the revised rules for quarantine and inspection must be identified, and changes to daily enforcement practices must be communicated and implemented. The Ministries of Agriculture and Health fall short in number of staff, knowledge, and expertise (in market economic principles, risk assessment, economic evaluation, and language skills) to do this work adequately within a period of 3 to 5 years, meaning a task force supported by international expertise will be necessary. Priority should be given to products with greatest export potential and to higher-volume import products that pose substantial human and agricultural health risks.

4.12 However, caution should be taken to ensure that the new standards adopted are based on sound cost-benefit analysis and that the cost of compliance will not price the Moldovan food basket out of the reach of the poor. External support will be needed for the development of an implementation plan for *the National Program for the Development of Technical Regulations* for food and agricultural products.[54] This plan should contain a clear set of objectives for moving from mandatory to voluntary standards, a timeline for developing technical standards, and resource needs. It may also include some capacity building for the standards-setting institutions.

4.13 The vertical technical regulations for agriculture will sometimes involve the same food safety issues addressed by the horizontal regulations under the Ministry of Health. For example, the Ministry of Agriculture's vertical regulations for cheese production must be compatible (legally and technically) with the Ministry of Health's horizontal regulations for food processing facilities and dairy products. Since the Ministry of Health has the technical competency for human health, it should be an integral part of all committees developing technical regulations for food products. Only those regulations affecting plant or animal health without implications for food safety would be the sole responsibility of the Ministry of Agriculture.

Recommended action

6. *Prepare a program of work for replacing the existing regulatory system with a system compliant with international standards and good practice for a market economy*

[54] Some assistance is already being provided by the European Commission Food Security Program.

(including resources needed and methods and principles) with priorities on fruit, vegetable, and nut regulations and voluntary standards. Provide support to the regulation-setting task force over the next 2 to 3 years.

4.14 **Certification.** The goal of the Moldovan certification system for SPS should be to facilitate trade while ensuring that public goals for human health and agricultural health continue to be met. As Moldova introduces new norms, many aspects of the certification system will change, including the responsibilities of various agencies. The Government should aim to eliminate duplication and other unnecessary requirements, while allowing the private sector to take on as many responsibilities for certification as possible.[55]

4.15 Implementation of technical regulations compliant with international standards will require complementary investment in facilities, equipment, and people, including capacity building for both public inspectors and industry specialists.[56] Some donors already provide assistance on HACCP, and training and certification are also available from some private companies in the country.[57]

Recommended actions

7. *As the Ministry of Health completes the development of the more important horizontal technical regulations regarding food safety, conformity assessment certificates for those food products should no longer be mandatory. In the meantime, for products requiring mandatory assessment, private bodies accredited by the Accreditation Center should be allowed to issue legally valid conformity assessment certificates.*
8. *Review the veterinary certification process. Veterinary certificates should only be issued once for products before entering the market at border points, slaughter points, and meat-packing facilities. Veterinary inspection of the finished or processed good for consumption made from products that have already passed veterinary inspection should be discontinued, except in cases of calamities. Programs for veterinary control of the informal market should be based on risk assessment.*
9. *The Ministry of Economy and the Ministry of Finance/Moldovan Department of Customs should issue letters eliminating the requirement for national conformity assessment certificates for exports at border checkpoints.*

4.16 **Accreditation.** Moldova's Accreditation Center will play a major role in ensuring that Moldovan labs, certification agencies, and so on, are recognized both domestically and by its trading partners. Currently, the Moldovan private sector's demand for international accreditation is quite small. Even so, the accreditation system is at the heart of the SPS infrastructure and is essential to establishing internationally-recognized laboratory and production facilities in Moldova. Also, the Accreditation Center, as an independent institution, is an example of good governance that should be developed further in Moldova. The Center seeks to enter into a MRA (Mutual Recognition Agreement) with the European Union and attempts to operate in accordance with EU standards EN40003 and EN45010. The Center lacks budget for collecting documents on accreditation and lab requirements overseas and for training staff in accreditation and conformance assessment procedures used abroad. The fee structure for accreditation and the *Law*

[55] Moldova Standard may be in the process of enacting, or may have already enacted, a new supplier's certificate of conformity. This should be confirmed and reviewed.

[56] It appears that one of the major problems in Moldova is the low level of salaries for civil servants. University chemistry and biology faculties are quite strong and can provide the training needed by the SPS infrastructure, but few people are entering the field because of the low salaries.

[57] The need may also exist for a comprehensive overhaul of Moldova's education and training in the food sector, but that is not covered in this action plan.

on Standardization both deserve review. Article 20c of the law requires accreditation fees be paid to Moldova Standard, instead of the new Accreditation Center. This needs to be revised.

Recommended action

10. *Evaluate the current practices of the Accreditation Center for conformance with current and projected trading partners' accreditation standards, developing an action plan for the recognition of the Accreditation Center by the European Union, and helping the Center develop a training program on EU requirements for Moldovan laboratories.*

4.17 **Laboratory System.** Each SPS body in Moldova has its own system of central and regional labs. This system appears to be fragmented and underfunded, limiting its ability to perform its functions. Laboratories are often poorly equipped and lack trained staff. Central reference laboratories clearly need strengthening. Regional and *rayon* labs are falling into disrepair, but it is not clear that the volume of work requires the number of public laboratories present at the *rayon* level. There are instances of overlapping testing at the municipal level, a waste of public resources that imposes additional costs on the private sector. Consolidation of laboratories as in the new EU member countries may help improve their operations and attain the maintenance funding needed to achieve international accreditation. In Lithuania, for example, the number of laboratories under the State Food and Veterinary Service has been reduced from 50 to 10 during the transition and will be further cut to 1 central and 4 regional labs. This consolidation helped the Lithuanian National Veterinary Laboratory gain ISO 17025 accreditation. It would also be desirable to identify areas where private laboratories can take on an increasing role in certification functions.

4.18 The central laboratory of the CPM needs strengthening for work on pesticide residues, veterinary drug residues, mycotoxins, rapid method microbiological and serological investigations, and virological investigations. Priority is needed for a program to deal with the issues of mycotoxins and virology (such as, but not limited to, avian influenza).

Recommended actions

11. *Evaluate Moldova's laboratory structure and help develop a strategic plan for the consolidation and future development of Moldova's laboratories.*

12. *Laboratory reinforcement is needed to enable Moldova to deal with the rapidly increasing demands for improved surveillance and monitoring for food safety and agricultural health and to improve the scientific basis for mandatory regulations and voluntary standards. Benefit-cost analysis should be used to determine to what level national public capacity should be developed, compared to use of contract private or regional facilities for high-cost, low-volume analyses.*

13. *Consolidate the veterinary laboratory system at central and* rayon *levels to meet restructured monitoring, surveillance, diagnostic, and certification strategies, based on priority needs and available budgetary support.*

4.19 **Inspection, monitoring, and surveillance.** The prevailing system of inspection, monitoring, surveillance, and quarantine for food safety, plant and animal health, and agrochemicals based on the GOST and former Soviet SPS systems loses part of its rationale when international standards and market economy principles are adopted. Moreover, the current system is not sufficiently based on cost and risk assessment, not well prioritized, and has gaps. The system could better target priorities in human health, agricultural health, and market access. However, the direction and pace of redesign must be balanced with the maintenance of CIS-compliant procedures for the bulk of Moldova's exports. In practical terms, this means that redesign should be prioritized according to the potential export flows into WTO-compliant markets.

4.20 The current division of responsibilities between public health and veterinary services is not in line with common international practice. The Center for Preventive Medicine (CPM) seems to be the most logical point and to have the best capacity for consolidation of food safety monitoring and surveillance in Moldova. This will involve a transfer of all town and municipal market laboratories to the CPM, with an adjustment and consolidation of staff, including veterinarians, within the CPM after reassessment of monitoring and surveillance needs. Such a move should reduce duplication and free some veterinary resources for better control of upstream animal health, thus improving enforcement capacity and reducing costs to the private sector. Veterinary inspection would continue at the level of abattoirs, quarantine points, border points, and meat-packing facilities, but would be discontinued at all market points post-abattoir. The draft law to restructure the veterinary service presents an opportunity to consolidate and streamline food safety enforcement that should not be ignored.

Recommended actions

14. *Evaluate inspection, monitoring, and surveillance programs with regard to priority setting and cost effectiveness, propose methods for design, and formulate a program for the first year.*

15. *Adjust law and policy to make the CPM responsible for food safety in the Moldovan marketplace with consolidation of authority for market testing and inspection of all food products as well as sales points for food and beverages.*

4.21 **Border control.** A comprehensive assessment by an independent and international expert is needed to examine whether Moldova's SPS control system and border procedures are in compliance with international requirements. On the operational level, Moldova Department of Customs' goods handling procedures and IT equipment are shifting to new software not supported by the computers currently available to the Moldovan veterinary and plant inspection services sharing the same border-post space. Neither veterinary nor plant inspectors can communicate electronically with their central laboratories. All animal health and plant quarantine inspections and reports are manually produced. IT systems are costly, however, and Moldova needs judicious investment in ICT support in data management and equipment for plant inspection and quarantine to leverage changes in border-post staffing and procedures.

4.22 Moldovan government bodies currently have monopolistic control of fumigation for plant quarantine. Services for trucks and rail cars are provided in fixed locations using essentially one fumigation technique (methyl bromide). The rigidity of the system adds unnecessary costs to exports and imports and reduces the likelihood of introduction of more environmentally friendly alternative treatments better suited to some (for example, higher-value) horticultural products.

4.23 The Central Plant Inspection and Quarantine laboratory and the subsidiary *rayon* laboratories are outmoded and cannot perform their tasks properly. While pesticide residue analysis capacity at the Central Laboratory is unnecessary, the laboratory's central taxonomic and diagnostic capacity for plant pests, plant diseases, and weed species should be judiciously reinforced or outsourced. The laboratory also needs assistance to reorganize work flow and to modernize record-keeping and sample storage.

Recommended actions

16. *Assess whether Moldova's SPS control systems and border procedures meet the WTO rules of nondiscrimination, with a view towards developing an action plan for bringing these systems into conformance with international requirements, as necessary.*

17. *Judiciously improve the ICT of the veterinary and plant inspection and quarantine services to ensure compatibility with the IT system of the Customs Service and to*

improve the accuracy and transparency of their data management for veterinary and plant quarantine inspection.

18. *Improve veterinary and plant inspection and quarantine border-crossing sampling and diagnostic capacity (pilot tools, equipment, and procedures for a selected set).*

19. *Study the benefits, costs, and governance requirements for privatization of fumigation and treatment services for plant quarantine, perhaps combined with restructured truck and railroad car sanitation and fumigation services.*

20. *Following a benefit and cost assessment, draft a plan and budget to upgrade the Central Plant Inspection and Quarantine Laboratory and selected* rayon *control laboratories to enable them to respond to the WTO SPS requirements.*

4.24 **Stamping out and emergency response.** While major investments are being made in livestock to make regulatory systems EU compliant – without much prospect of animal product exports to the EU –important outstanding issues remain: overstaffing of the veterinary services; weaknesses in applying existing policies to stamp out animal diseases; and very weak capacity to deal with the SPS and economic impacts of avian flu, now on Moldova's borders.

4.25 The present system for stamping out is insufficiently effective and should be combined with a compensation program. The basic system should operate for animal and product destruction as well as rendering or BMB (bone meal and blood) processing and the back-end disposal of waste and biohazard materials at the local level. Additional funding may be needed to support emergency operations for managing the risk of pandemics such as avian influenza.

Recommended action

21. *Design an improved system to support the stamping out of livestock diseases, with a special emphasis on zoonoses, with the understanding that budgetary and technical constraints force Moldova to prioritize carefully; focus initially on a limited number of diseases.*

4.26 **Reorganization of veterinary services.** Moldova has an oversupply of technical staff in its public veterinary service. In restructuring of the veterinary service, certain functions can be privatized, and the size of public sector staff can be reduced though privatization.

Recommended action

22. *Separate public and private functions in veterinary services and provide support for the privatization of curative veterinary services.*

4.27 **Plant health and pesticide management.** Support from the World Bank and EU for the destruction of out-of-date pesticides is underway and will enhance confidence in the safety of Moldovan horticultural products in foreign and domestic markets. A pesticide container collection and destruction policy and enforcement should be developed to support growth in the fruit and vegetable industry in line with increasing calls in export markets for compliance with codes of Good Agricultural Practices (GAPs).

4.28 Testing pesticide formulations for compliance with labels should be assigned to a laboratory with the necessary equipment. In Moldova, the State Center for Certification and Approbation of Phytosanitary Means and Fertilizers has the best capacity for this testing. Currently the Center imposes a mandatory three years of testing before pesticide registration, unnecessary if other countries have conducted sufficient testing, thus imposing additional costs for the private sector. Abolishing this requirement and accepting trial and use information from neighboring countries with similar environment should be a precondition for any assistance in the field.

Recommended actions

23. *Conduct cost-benefit analysis and design a system for pesticide container collection and disposal.*

24. *Design and train staff in risk assessment related to the introduction of new phytosanitary means and fertilizers in order to reorient registration policy.*

4.29 **Public information and awareness.** Most efforts to improve food safety and agricultural health require no great investment, only awareness and preventive action. In food safety, simple approaches that may produce extensive benefits are providing basic hygiene training to food handlers and information to consumers about how to avoid risks.[58] Moldova should initiate general educational programs for farmers, food handlers, and consumers. At all levels, risks can be mitigated. The FAO and WHO have information materials, publications, and training manuals on food safety. Translation of these materials and dissemination to all stakeholders —government staff, farmers, private enterprises, and consumers — can be achieved through educational and other programs.

4.30 Parasites represent a serious health problem in Moldova, especially in rural areas, and deserve broadened and deepened preventive efforts. The CPM and the Veterinary Health inspectorates and laboratories need to cooperate at the *rayon* and municipal levels. Design efforts and pilot programs will be needed to optimize direct interventions by the two services in the field and in public hygiene education settings (school and field, television, radio). Pilot programs at the *rayon* level should address both ascaridae and echinococcis infections as a priority. The payoffs will be reduced human morbidity and increased productivity of livestock. This activity should be used as a demonstration project reinforcing the integration of human and agricultural health practice by the public and the private sector.[59]

Recommended actions

25. *Initiate food safety educational campaigns for government staff, farmers, food handlers, and consumers.*

26. *Expand antiparasitic disease campaigns carried out by* rayon *councils with the support of the local CPM and Veterinary Services. These should be extended beyond human curative treatment to preventive actions with domestic animals (especially dogs) and livestock, that is, the segregation and fencing of slaughter facilities. National authorities can help with the design of these programs, but community-implemented parasite control programs tend to be more successful than those driven from the center.*

4.31 **The private sector.** In market economies the private sector has the primary responsibility for food safety. The growing requirement for use of safety and quality control systems, such as HACCP and ISO standards, results in a shift of responsibilities to the private sector. The government can focus on the provision of public goods such as enforcement of laws and regulations, infrastructure, and the development of human skills. An efficient and effective approach to SPS management is characterized by good public-private cooperation. Government agencies should actively engage the private sector in policy preparation and standard-setting considering the high compliance costs to the industry; this will avoid the setting of unobtainable standards or requirements that will unnecessarily harm the competitiveness of the industry. Strong coordination between public and private institutions will, likewise, be a critical element of

[58] Unnevehr and Hirschhorn 2000.

[59] Ascarid infections are predominantly, but not exclusively, through human-to-human transmission, and improved livestock productivity is not an SPS issue. However, the explicit inclusion of these benefits in benefit-cost analysis of SPS actions improves the likelihood of their support and adoption at community levels.

surveillance of plant and animal pests and diseases to implement an integrated safeguarding system of the agro-food chain.

4.32 Moldova's food processing industry needs upgrading with regard to facilities, skills and management. For example, many processors operate in plants built during the Soviet era whose construction structure and materials do not meet good manufacturing practice (GMP) requirements and are insufficient for effectively implementing HACCP. The processing equipment and technology are often out-of-date. Water supply and wastewater handling, which are crucial to food safety and hygiene management, form a major problem to some food processors: fruit and vegetable, milk and meat processing plants often need in-plant water treatment capacity, yet current water supply and wastewater treatment facilities in most plants are generally deficient and require upgrading. Thus, access to financing for improving plant buildings, facilities and equipment is a major challenge for the Moldovan food processing sector. In addition, the food industry also needs training in meeting general hygiene requirements for food processing and modern food safety and quality management practice such as GMP, HACCP and the ISO quality management systems.

Recommended action:

27. *Develop a support program for upgrading food businesses. Private sector upgrading projects may cover plant renovation, hygiene facility improvement, quality management, water supply, waste management and supply chain organization. The support should include comprehensive improvement plans for the convergence toward EU principles of hygiene in food processing, accompanied by timetables and a financing plan.*

4.33 **Other related programs.** Two issues that have been mentioned earlier, the improvement of water quality and the collection and safe disposal of POPs, require large funding and have broad social and environmental impact far beyond food safety and SPS. Actions in these areas might be taken in other programs, but they will have a direct impact on food safety and SPS management.

Recommended action

28. *Provide support for packing, transport, insurance, and disposal of highest risk pesticides. .*

4.34 Table 12 presents the recommended actions based on the discussion above. For each action, the level of priority and estimates of time frames and costs are indicated,[60] as are agencies to be involved. In considering costs, the table differentiates between actions aimed at public sector improvement and optimization and those for the private sector upgrading. The total cost of actions for public sector improvement stands at US$ 9.706 million, while US$ 3.015 million is proposed for private sector upgrading and capacity building. The last recommendation, as discussed earlier, involves large investment from other programs with broader social and environmental objectives.

4.35 Finally, it should be noted that upgrading Moldova's SPS system and infrastructure to international norms will not in and of itself lead to an expansion of exports. Moldova also requires investment to upgrade the quality and reliability of supply of its main agricultural products. With respect to private investments, many producers and processors must invest in new

[60] See Appendix 7 for cost estimates.

facilities and in new quality-control procedures. With respect to the public sector, official facilities, methods and equipment all need upgrading. External donor funding and lending will be essential to public-sector capacity building, and a number of donors are supporting food safety and SPS projects (see Appendix 8). External investment must be paced with the public capacity to absorb the investments and sustainably fund operating and maintenance costs, however. This type of analysis may lead to the decision, for example, to rely on regional diagnostic capacity for some elements of the SPS system. Infrastructure investment also should be accompanied by broader policy changes to reduce regulatory risk and improve the incentive structure, such as allowing processors to obtain inputs at world prices. It is imperative that the SPS system be used to protect public health and to facilitate trade, rather than to tax producers and exporters.

Table 12: Action matrix for food safety and SPS management (5 to 6 year implementation period)

Issues	Recommended Actions	Time Frame*	Priority	Office Involved**	Estimated Cost (US$)	Related Assistance
Setting up a coordination unit	1. Establish a coordination unit consisting of a chief coordinator and contact points from various government agencies involved in SPS management.	Short- to medium-term	High	MAFI, MOH, MET, Moldova Standard	1,020,000	
Institutional restructuring	Identify areas of overlap and gaps in responsibilities among agencies in managing food safety; assess the best option for Moldova, a single agency for food safety or a multi-agency structure but with improved alignment among the present services and clearer definition of the roles and responsibilities of each agency; and make a plan to implement the new structure.	Short-term	High	MAFI, MOH, MET, Moldova Standard	148,000	
Economic analysis and risk assessment	2. Assess Moldova's competitiveness in fish, dairy, and livestock products to determine the potential benefits of investing in third-country status for these products.	Short-term	High	MAFI, MET, Moldova Standard	66,000	
	3. Conduct cost-benefit analysis of current livestock investment strategies of government and donors.	Short-term	High	MAFI, MET	63,000	
	4. Provide assistance to develop and train a core group of risk assessors.	Medium-term	High	MOH, MAFI, Moldova Standard	220,000	
Harmonization of regulatory system	5. Prepare a program of work for replacing the existing regulatory system with a system compliant with international standards and good practice for a market economy (including resources needed and methods and principles) with priorities on fruit, vegetable, and nut regulations and voluntary standards. Provide support to the regulation-setting task force over the next 2 to 3 years.	Short- to medium-term	High	MAFI, MOH, MET, Moldova Standard	716,000	
Certification	7. As the Ministry of Health completes the development of the more important horizontal technical regulations regarding food safety, conformity assessment certificates for those food products should no longer be mandatory. In the meantime, for products requiring mandatory assessment, private bodies accredited by the Accreditation Center should be allowed to issue legally valid conformity assessment certificates.	Medium-term	Medium	MOH, MAFI, Accreditation Center	35,000	World Bank Competitiveness Enhancement Project (see Appendix 8)

	8. Review the veterinary certification process. Veterinary certificates should only be issued once for products before entering the market at border points, slaughter points, and meat-packing facilities. Veterinary inspection of the finished or processed good for consumption made from products that have already passed veterinary inspection should be discontinued, except in cases of calamities. Programs for veterinary control of the informal market should be based on risk assessment.	Medium-term	Medium	MAFI (State Sanitary Veterinary Service), MOH	105,000	
	9. The Ministry of Economy and the Ministry of Finance/Moldovan Department of Customs should issue letters eliminating the requirement for national conformity assessment certificates for exports at border checkpoints.	Short-term	Medium	MET, MOF, Customs		
Accreditation	10. Evaluate the current practices of the Accreditation Center for conformance with current and projected trading partners' accreditation standards, developing an action plan for the recognition of the Accreditation Center by the European Union, and helping the Center develop a training program on EU requirements for Moldovan laboratories.	Short- to medium-term	Medium	Accreditation Center, laboratories	163,000	World Bank Competitiveness Enhancement Project (see Appendix 8)
Laboratory system	11. Evaluate Moldova's laboratory structure and help develop a strategic plan for the consolidation and future development of Moldova's laboratories.	Short- to medium-term	High	MOH, MAFI, Main State Phytosanitary Inspectorate, Accreditation Center	124,000	
	12. Laboratory reinforcement is needed to enable Moldova to deal with the rapidly increasing demands for improved surveillance and monitoring for food safety and agricultural health and to improve the scientific basis for mandatory regulations and voluntary standards. Benefit-cost analysis should be used to determine to what level national public capacity should be developed, compared to use of contract private or regional facilities for high-cost, low-volume analyses.	Medium- to long-term	Medium	CPM	972,000	
	13. Consolidate the veterinary laboratory system at central and *rayon* levels to meet restructured monitoring, surveillance, diagnostic, and certification strategies, based on priority needs and available budgetary support.	Short- to medium-term	High	MAFI (State Sanitary Veterinary Service)	594,000	
Inspection, monitoring, and surveillance	14. Evaluate inspection, monitoring, and surveillance programs with regard to priority setting and cost effectiveness, propose methods for design, and formulate a program for the first year.	Medium-term	Medium	MOH, MAFI	716,000	

	15. Adjust law and policy to make the CPM responsible for food safety in the Moldovan marketplace with consolidation of authority for market testing and inspection of all food products as well as sales points for food and beverages.	Medium- to long-term	Medium	CPM, State Sanitary Veterinary Service	799,000	
Border control	16. Assess whether Moldova's SPS control systems and border procedures meet the WTO rules of nondiscrimination, with a view towards developing an action plan for bringing these systems into conformance with international requirements, as necessary.	Short- to medium-term	Medium	State Sanitary Veterinary Service; Main State Phytosanitary Quarantine Inspectorate	71,000	
	17. Judiciously improve the ICT of the veterinary and plant inspection and quarantine services to ensure compatibility with the IT system of the Customs Service and to improve the accuracy and transparency of their data management for veterinary and plant quarantine inspection.	Medium- to long-term	Medium	State Sanitary Veterinary Service; Main State Phytosanitary Quarantine Inspectorate	321,000	
	18. Improve veterinary and plant inspection and quarantine border-crossing sampling and diagnostic capacity (pilot tools, equipment, and procedures for a selected set).	Medium- to long-term	Medium	State Sanitary Veterinary Service; Main State Phytosanitary Quarantine Inspectorate	722,000	
	19. Study the benefits, costs, and governance requirements for privatization of fumigation and treatment services for plant quarantine, perhaps combined with restructured truck and railroad car sanitation and fumigation services.	Medium term	Medium	Main State Phytosanitary Quarantine Inspectorate	144,000	
	20. Following a benefit and cost assessment, draft a plan and budget to upgrade the Central Plant Inspection and Quarantine Laboratory and selected *rayon* control laboratories to enable them to respond to the WTO SPS requirements.	Medium- to long-term	Medium	Central Plant Inspection and Quarantine Laboratory and *rayon* labs	906,000	
Stamping out and emergency response	21. Design an improved system to support the stamping out of livestock diseases, with a special emphasis on zoonoses, with the understanding that budgetary and technical constraints force Moldova to prioritize carefully; focus initially on a limited number of diseases.	Short-term	High	MAFI (State Sanitary Veterinary Service)	432,000	World Bank, multiple donors: Avian Flu Control Project (AIHP)

Reorganization of veterinary services	22. Separate public and private functions in veterinary services and provide support for the privatization of curative veterinary services.	Medium- to long-term	Medium	MAFI (State Sanitary Veterinary Service)	88,000	
Plant health and pesticide management	23. Conduct cost-benefit analysis and design a system for pesticide container collection and disposal.	Medium-term	Medium	MAFI	219,000	
	24. Design and train staff in risk assessment related to the introduction of new phytosanitary means and fertilizers in order to reorient registration policy.	Medium-term	Medium	MAFI, Main State Phytosanitary Quarantine Inspectorate	63,000	
Public information and education	25. Initiate food safety educational campaigns for government staff, farmers, food handlers and consumers.	Medium- to long-term	Medium	MAFI, MOH, public media	599,000	
	26. Expand antiparasitic disease campaigns carried out by *rayon* councils with the support of the local CPM and Veterinary Services. These should be extended beyond human curative treatment to preventive actions with domestic animals (especially dogs) and livestock, that is, the segregation and fencing of slaughter facilities. National authorities can help with the design of these programs, but community-implemented parasite control programs tend to be more successful than those driven from the center.	Short-term	Medium	CPM, MAFI, local governments	400,000	
Private sector	27. Develop a support program for upgrading food businesses. Private sector upgrading projects may cover plant renovation, hygiene facility improvement, quality management, water supply, waste management and supply chain organization. The support should include comprehensive improvement plans for the convergence toward EU principles of hygiene in food processing, accompanied by timetables and a financing plan.	Short- to medium-term	High	MOH, MAFI, Moldova Standard, Private sector	3,015,000	EU CAMIB USAID: Agricultural Development Project
Other related programs	28. Provide support for packing, transport, insurance, and disposal of highest risk pesticides.	Medium- to long-term	Medium	MAFI	5,096,000	World Bank POP Stockpile Management Project

Notes: * Time frame: short-term = 1-18 months; medium-term = 18 months to 4 years; long-term = 5 to 6 years.
** MOH: Ministry of Health; MAFI: Ministry of Agriculture and Food Industry; MET: Ministry of Economy and Trade; CPM: Center for Preventive Medicine.

APPENDICES

Appendix 1 Moldova's Food Processing Industry

Processing of food and beverages makes up about 60 percent of all manufacturing in Moldova. The most important products include wine, fruit and vegetables, meat, and dairy products.

Wine and brandy

Wine and distilled spirits represent the largest portion (46 percent in 2005) of Moldova's food processing and a significant part of all industrial output (20 percent). The long decline of wine grape and winery production was halted with the help of major investment by the EBRD, IFC, and World Bank in the 1990s, which targeted rehabilitation of wineries and bottling facilities. These investments helped modernize the industry, beginning its shift in focus from sales of bulk wine to bottled wine production.

After Moldova's long delay in making the decision to accelerate privatization of the wine industry, change is occurring rapidly, but perhaps not rapidly enough to avoid losing share in its core Russian market. Moldova's wine production was oriented towards the consumer of spirits with high alcohol content, and while the country has maintained total sales to the price-sensitive low end of the marketplace, it has not yet been able to improve quality at competitive prices to build market share for Russia's rapidly differentiating wine market. Competition from Latin American and South African exports to Russia is growing rapidly in the middle and upper quality ranges, where these countries' products are seen as having a better price-to-quality relationship. This threat has recently impelled the Moldovan wine industry to start to change its wine making practices to build markets in other Western European markets and, to a lesser extent, the USA.

Moldova has 126 primary production wineries processing grapes into raw wine, 6 secondary production wineries bottling wine, and 18 wineries both producing and bottling wine. In addition there are 7 brandy factories, 9 sparkling wine producers, and 3 producers of fortified wines. All but 11 of the wineries have been privatized, and all vineyards are privately owned. About 70,000 individuals, mostly smallholder farmers, grow grapes. Another 15,000 workers are engaged in processing and allied industries.

Leasing of land has permitted consolidation of holdings that are now being replanted in wine grapes. Changes in cultivars will permit the making of wines better adapted to export markets.

Fruit and vegetable processing[61]

Fruit and vegetable processors are divided into two main groups: (i) 17 large firms, of which 7 are active, focused on export markets and producing about 80 percent of the total output of the sub-sector; and (ii) about 50 small and-medium canneries mainly serving the domestic marketplace. Together these firms process from 150,000 to 200,000 tons of raw material, mainly fruit in juices, juice concentrates, and canned preserves. This represents just one-third of the industry's processing capacity, however. The larger factories contract from farmers and aggregators for their

[61] CNFA 2004.

raw material supplies. The small and medium-canneries usually own or lease their own land and produce most of their own raw material.

Fruit and vegetable processing is export oriented, with apple juice and apple juice blends dominating, followed by tomato juice and puree products. Domestic demand is swamped by the installed industrial capacity and is weak due to the low incomes of most of the population. Russia, the traditional market, still ranks as the primary market for Moldova's processed fruit and vegetable products. The CIS states absorb over 70 percent of the country's exports in this category, with the EU taking about 14 percent. Walnuts are the exception to the general rule, with about 70 percent being exported to the EU.

The leading companies have upgraded their facilities to meet international standards. Three have reached ISO 9002 certification standards and have implemented HACCP plans for a major portion of their operations. One company's commercial strategy is to diversify their product range to compete on the CIS market and to respond to the requirements of supermarkets that are gradually taking over distribution channels. Fruit and vegetable purees and mixes for baby food, as well as fruit and vegetable juice blends, are of increasing importance, while traditional single juice or concentrate products are declining in importance as they become commoditized on world markets.

Dairy

The dairy industry is based primarily on the supply of raw milk from small producers from company-owned collection centers and from dairy cooperatives with collection centers financed by the dairy companies or through donor programs. While overall milk supply is adequate and animal productivity has been increasing slowly, dairy processors have seen only marginal improvements in the quality of milk. Foreign investment in the sector has been relatively strong in past years due to the potential for import substitution, but these investors are beginning to question the viability of the sector's dependence on smallholder milk. They are pressing national partners to switch strategy to include larger dairy herds with improved breeds, management, and nutrition. This is especially true in the cheese industry, where low protein levels hinder the production of higher value hard cheeses. Even in this area, the potential for growth is limited unless export opportunities grow. For example, a new HACCP-certifiable hard cheese facility has recently been completed as part of a vertically integrated dairy investment between Moldovan and Dutch partners. Its output will easily supplant most of the imports of Gouda-style cheeses.

The industrial facilities supply dairy products that require quick consumption (pasteurized milk) and low storage space (sour cream, yogurt, curds, soft cheeses, and so on). The bulk of the population is served by dairy products produced in small household operations in rural areas for local consumption. The growth of the urban supermarket distribution system, however, through which milk products are stored in clean facilities at constant storage temperatures, is changing urban consumption patterns. It is not clear whether the dairy industry can reach a tipping point that will enable industrial facilities to process and sell a larger proportion of the fluid milk produced in the country. **Table A1-1** shows that the utilization rate of existing plant capacity is low, at about 12 percent. Companies make profits despite these low utilization rates because their facility acquisition costs at privatization were low. Rapid consolidation in the industry is likely, however, if vertically-integrated operations with higher cow productivity, higher quality fluid-milk supplies, and better energy efficiencies are established.

Meat

Moldova's formal meat-processing industry is highly consolidated. While industry sources indicate there are over 100 meat processors with business registrations, only 14 pay revenue taxes. Carmez in Chisinau and Basarabia Nord in Balti dominate the domestic market, together

controlling about 70 percent. Along with Carmez International, a Belgian joint venture now separate from Carmez, these companies dominate the export market and have strong brands. All three import 85 to 95 percent of their meat and offal raw material and nearly all of their ingredients for sausage and ham manufacture. A handful of other manufacturers supply sausage and smoked meats to the supermarket and small shop outlets in cities and towns. Meat companies operate their abattoirs on an intermittent basis, because domestic stock is more expensive than imported frozen meat. Poultry meat imports ready for retail have also grown rapidly over the past several years, with over half of the existing poultry farms inactive. Exports of meat derive primarily from the addition of value to imported raw materials. Well over half of the production of the processing industry is exported to CIS states. Moldova has not qualified for the "third country" status needed to export meat products to the EU.

Table A1-1: Trends in the milk processing industry, 1998–2003 (MT)

	1998	*1999*	*2000*	*2001*	*2002*	*2003*
Milk production	610,450	589,437	573,326	579,483	604,323	593,080
Milk collected	118,800	78,192	98,973	133,818	120,116	132,216
Finished product	42,632	32,767	39,005	26,549	57,690	51,650
Factory capacity utilization (%)	13	8	11	14	13	14
Exports	2,364	2,874	3,651	6,931	4,577	5,437
Imports	1,187	486	892	1,402	2,486	2,965

Source: Lozavanu 2005 and FAOSTAT 2005, for milk production.

Most of the meat industry in Moldova is housed in out-of-date facilities that were not designed or built according to GMP guidelines. Major investments are needed to bring them up to a level that would permit HACCP certification. In most cases, it would make more sense from a financial and an environmental (water, air, location within urban build-up areas) perspective to relocate and build new facilities. The Belgian joint venture has a modern plant. Both domestic leaders are also upgrading their facilities, but this is likely to be an interim measure to meet the demands of increasing competition in key CIS client states and the demands of Moldova's supermarkets. Romanian meat processors may be the next generation of investors in Moldova, because changes there in regulations to meet sanitary requirements for EU accession are pushing up their costs and eroding their competitiveness to sell into CIS states. This is also likely to be a medium-term opportunity for Moldova, until the CIS states themselves join the WTO and accelerate their own harmonization with EU standards.

Appendix 2 Moldova's Agricultural Exports, 1997–2004, US$'000

Destination/ Product	1997	1998	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
All countries	**381,394**	**459,698**	**296,700**	**290,241**	**357,643**	**400,423**	**463,104**	**527,295**
Meat and edible meat offal	67,006	27,695	21,223	12,738	6,686	6,094	19,134	8,728
Dairy products; birds' eggs; natural honey	6,515	5,776	6,529	8,027	10,919	7,515	5,613	9,503
Edible vegetables and certain roots	2,263	3,063	4,138	1,808	3,194	4,665	1,618	2,934
Edible fruit and nuts; peel of citrus fruits or melons	34,153	28,899	20,076	22,359	24,079	28,605	54,547	64,698
Cereals	22,332	21,853	25,790	13,683	18,821	47,481	18,496	24,445
Oil seed, oleaginous fruits; misc. grains, seeds, and fruit	14,732	15,830	15,463	27,430	32,337	19,473	15,518	27,293
Prep. of meat, fish, or crustaceans	8,094	5,367	1,614	2,913	4,347	4,453	2,468	2,969
Sugars and sugar confectionery	64,940	28,849	9,814	3,118	9,477	12,933	11,862	4,067
Prep. of vegetable, fruit, nuts, or other parts of plants	77,073	67,853	34,902	28,496	34,133	28,178	38,445	40,359
Beverages, spirits, and vinegar	22,128	209,192	110,516	128,016	174,733	195,918	242,092	277,900
Tobacco and manufactured tobacco substitutes	42,668	32,116	33,875	30,555	24,426	16,662	9,475	8,921
Animal/veg. fats and oils	8,088	3,780	2,464	3,869	8,588	16,820	28,897	41,228
Other	11,402	9,424	10,295	7,230	5,903	11,625	14,937	14,250
CIS countries	**256,367**	**353,396**	**207,876**	**218,492**	**276,422**	**285,151**	**342,852**	**399,654**
Meat and edible meat offal	54,063	17,812	15,089	12,114	6,686	6,072	19,064	8,706
Edible vegetables and certain roots	1,674	1,910	1,871	1,060	2,441	2,735	1,246	1,743
Edible fruit and nuts; peel of citrus fruits or melons	20,610	11,298	2,088	4,215	5,140	6,336	28,830	34,588
Cereals	17,930	14,171	14,057	12,777	10,534	16,846	7,855	10,082
Oil seed, oleaginous fruits; misc. grains, seeds, and fruit	2,801	6,362	6,934	9,549	14,562	6,971	4,710	10,590
Animal/veg. fats and oils	6,743	3,200	2,283	1,432	3,730	4,310	10,573	24,198
Prep. of meat, fish, or crustaceans	8,086	5,366	1,559	2,905	4,319	4,452	2,468	2,967
Prep. of vegetable, fruit, nuts, or other parts of plants	50,868	50,043	24,991	23,512	25,961	19,424	20,395	26,230
Beverages, spirits, and vinegar.	17,767	199,444	98,536	118,962	169,545	189,298	233,692	269,152
Tobacco and manufactured tobacco substitutes	29,063	29,058	31,682	28,469	23,722	12,466	8,907	7,654
Other	46,762	14,733	8,787	3,498	9,781	16,242	5,113	3,744
EU-15	**40,287**	**34,744**	**28,139**	**23,699**	**28,814**	**29,968**	**40,754**	**46,316**
Meat and edible meat offal	--*	371	314	--	--	--	--	--
Dairy products; birds' eggs; natural honey	364	103	284	225	325	1,205	295	334
Edible vegetables and certain roots	--	--	372	67	64	385	40	85

Edible fruit and nuts; peel of citrus fruits or melons	11,616	15,525	15,055	14,939	16,187	14,144	19,605	21,611
Cereals	2,485	2,203	2,167	286	781	4,496	11	925
Oil seed, oleaginous fruits; misc. grains, seeds, and fruit	2,686	2,908	878	3,964	3,687	705	520	4,070
Prep. of vegetable, fruit, nuts or other parts of plants	22,315	12,026	7,407	2,713	6,162	5,882	14,838	10,346
Beverages, spirits, and vinegar	99	451	569	383	425	986	1,671	2,043
Residues and waste from the food industry	100	13	150	268	190	824	2,363	5,213
Tobacco and manufactured tobacco substitutes	--	181	58	25	150	552	254	397
Other	622	962	882	827	841	789	1,158	1,292
CEEC	**64,090**	**55,397**	**46,649**	**38,260**	**33,079**	**50,684**	**57,042**	**52,025**
Meat and edible meat offal	12,893	9,464	5,797	590	--	--	--	21
Dairy products; birds' eggs; natural honey	1,259	4,165	4,780	7,392	9,472	4,491	2,894	4,020
Edible vegetables and certain roots	391	462	382	195	315	677	238	1,028
Edible fruit and nuts; peel of citrus fruits or melons	662	947	952	590	308	1,794	2,125	2,320
Cereals	702	1,193	5,242	409	3,715	13,394	7,952	6,758
Oil seed, oleaginous fruits; misc. grains, seeds, and fruit	585	3,332	5,483	11,657	6,848	3,993	3,653	7,403
Animal/veg. fats and oils	392	516	49	2,125	2,146	11,457	18,092	15,451
Sugars and sugar confectionery	28,483	21,758	7,710	2,185	3,350	3,143	11,341	3,631
Prep. of vegetable, fruit, nuts, or other parts of plants	1,343	2,135	1,951	2,076	1,388	2,116	1,783	3,151
Beverages, spirits, and vinegar	3,885	8,267	10,212	7,832	4,085	4,419	5,334	4,967
Other	13,495	3,158	4,091	3,210	1,452	5,201	3,630	3,274
USA	**53,100**	**4,880**	**4,486**	**2,262**	**9,718**	**18,817**	**10,290**	**11,207**
Cereals	43	439	1,320	149	2,906	9,994	2,624	6,347
Oil seed, oleaginous fruits; misc. grains, seeds, and fruit	3,677	2,517	1,594	1,208	5,718	7,514	6,318	2,551
Animal/veg. fats and oils	881	9	25	240	575	--	4	1,124
Prep. of vegetable, fruit, nuts, or other parts of plants	54	1,131	207	113	143	55	99	119
Beverages, spirits, and vinegar	--	784	893	485	183	670	763	782
Tobacco and manufactured tobacco substitutes	608	--	--	--	--	103	54	146
Other	0	0	446	67	193	481	428	138

* -- : No export recorded.

Appendix 3 Animal Health in Moldova

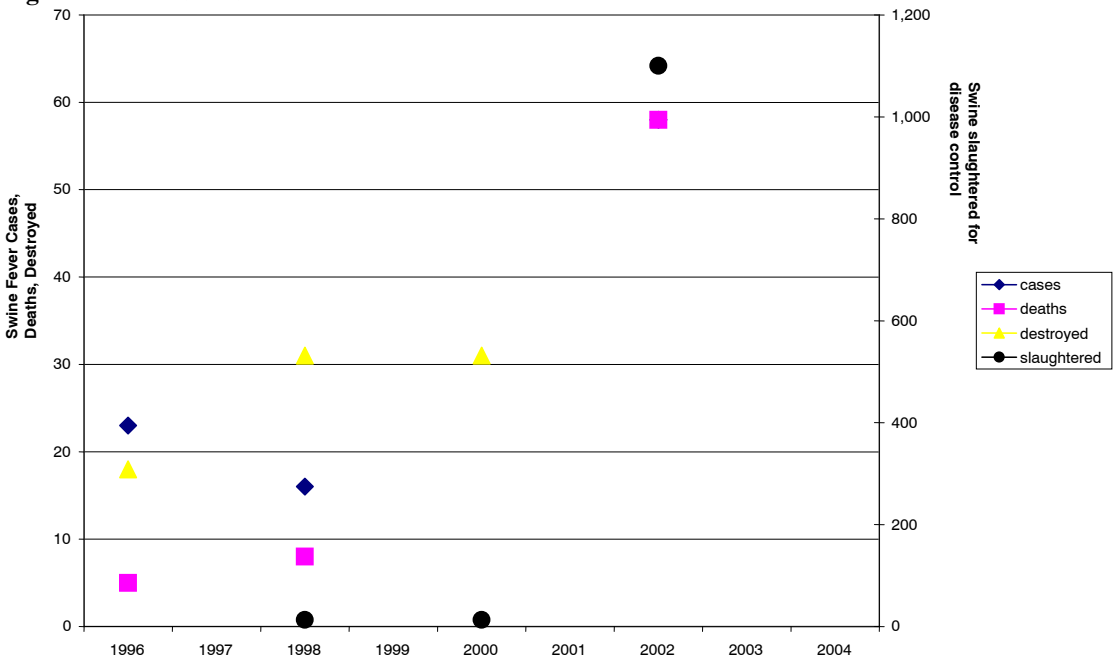
Livestock operations in Moldova fragmented from a few hundred collective farms to hundreds of thousands of small farms after independence in 1991. Most farms with stock have very small numbers of large stock: 1 to 3 cattle, 2 to 5 pigs, 4 to 10 sheep, or 1 to 3 goats. Villagers generally combine livestock in herds or free-range flocks of geese and ducks tended by herders, although herds return to their individual owners at night. Larger livestock operations have been developed through the consolidation of poultry cooperatives or purchase and restocking of former industrial-scale farms.

Moldova has been a member of the World Organization for Animal Health (OIE) since 1993. Its animal health strategy is adjusted to the nature of a disease, the type of disease risk present, the capacity of the veterinary services to monitor and screen for diseases, and the capacity of these services to intervene at the borders or points of disease outbreaks and to take disease prevention or curative measures. Compromises on intervention strategies are made throughout the system because of the fragile financial situation of small-holder producers. A few diseases are used here to illustrate this point.

Classical swine fever (CSF) is a former List A OIE disease. Within the EU, because of the threat of rapid spread and mortality, official policy calls for stamping out the disease by destroying all swine in infected herds. Vaccinations are prohibited except in emergency cases when they are needed to slow the spread of the disease.

Moldova uses animal quarantine measures to prevent import of infected stock or movement of infected stock within the country, carries out essentially universal vaccination of pigs for CSF, and executes a form of modified stamping out when outbreaks occur. In 2002, two outbreaks and 58 deaths occurred (see Figure A3-1). The dead animals were destroyed by burning, and 1,100 animals were slaughtered in the infected areas. Because it poses no danger to humans and because the sale of meat is the only means of compensating farmers for forced slaughter, the meat from the slaughtered animals was sold on the local market.

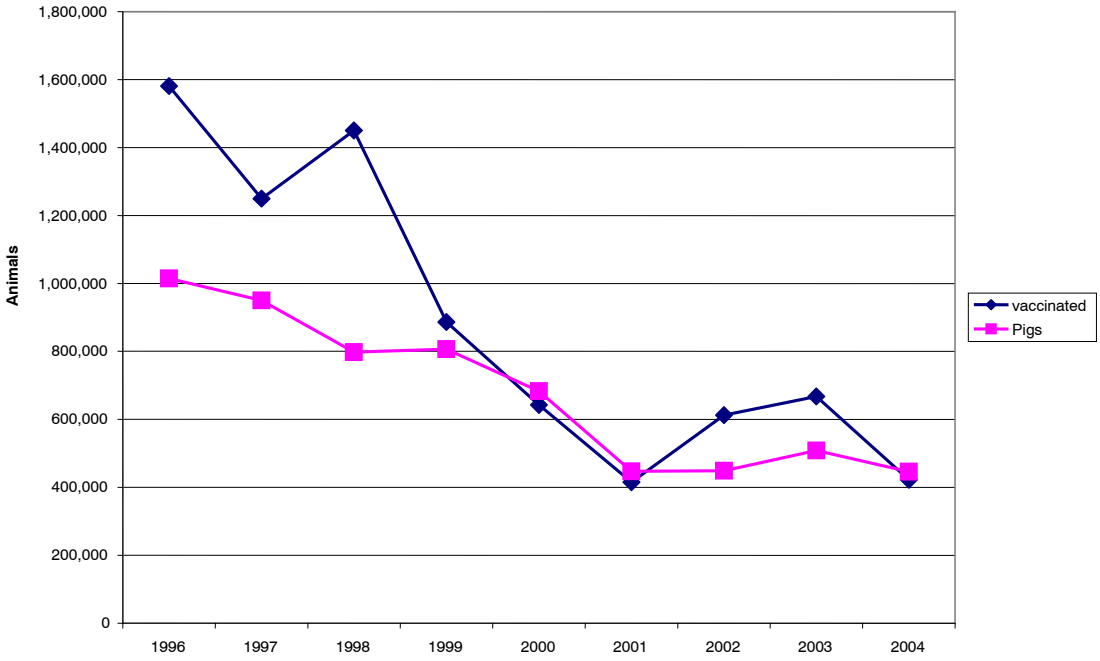
Figure A3-1: Classical swine fever



Source: OIE 2005 statistics.

The CSF outbreaks occurred even with essentially total vaccination of the pig herd, as shown in Figure A3-2. This raises questions about vaccine quality or the quality of its storage and application. Indeed, the 2002 outbreak appears to have been linked to problems with the vaccine supply. Domestic production practices increase the risk of disease spread. Swine are fed kitchen scraps and forage widely in Moldovan villages. Many villages are located next to oak forests where wild boars reside, and both domestic and wild animals seek acorns and other forage. The current level of sampling of wild boars (9 in 2004) is too small to determine if a CSF reservoir exists in Moldova. Before CSF could be eliminated from the domestic herds and CSF-free status certified, Moldova would need to change swine feed management, increase its surveillance of wild boars, and develop better operating guidelines and a financial plan to support animal destruction and slaughter and restocking. The country would also have to demonstrate strong controls on the imported pork and viscera that currently makes up most of the raw material used by domestic ham and sausage processors. The costs of achieving disease-free status to meet EU import requirements would appear to be too high for a relatively small domestic industry, especially for a disease that poses no potential risk to human health or food safety.

Figure A3-2: Swine vaccinated against classical swine fever



Source: OIE 2005, FAO 2005.

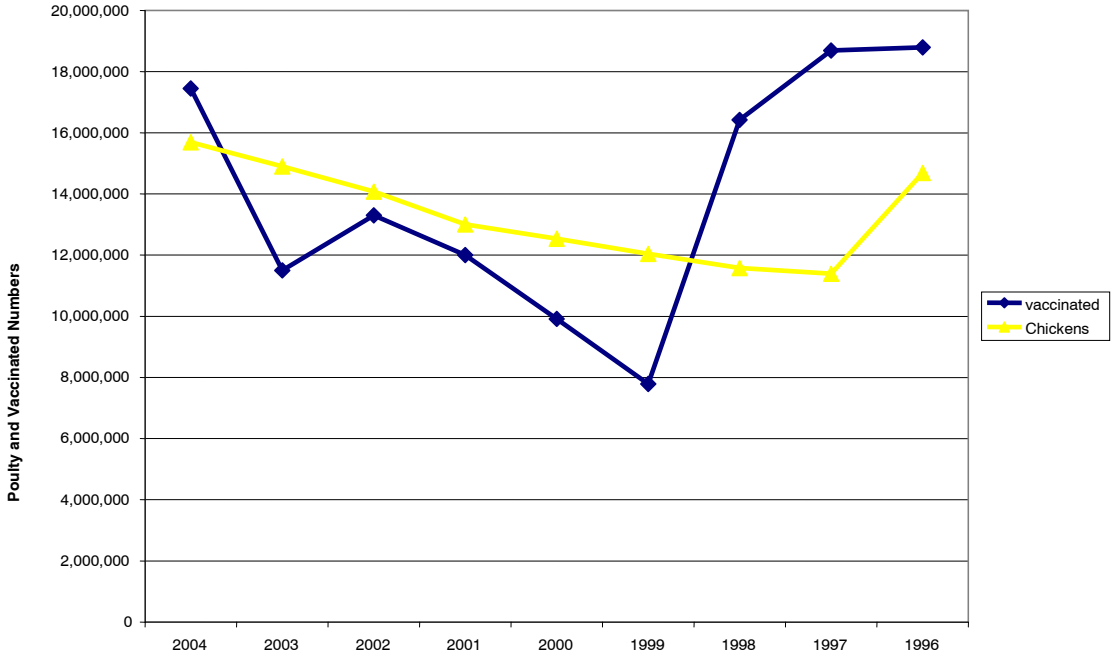
Neighboring Romania adopted EU regulations in 2005 and now prohibits vaccination of domestic swine for classical swine fever except as an emergency adjunct to stamping out, although it does vaccinate about 10,000 wild boars each year to control the natural viral reservoir. It experienced a CSF outbreak in early 2005 that was partly controlled by destruction and slaughter of infected herds and has been warned by the EU that failure to improve CSF risks could delay accession in 2007. Thus, CSF will be a continuing point of SPS friction in trade relations between Moldova and Romania, with the intensity increasing if Romania does achieve CSF-free status.

Foot and mouth disease (FMD) was last diagnosed in Moldova in1980. Following a long campaign of vaccination and control that ended in 1994, no new cases have been diagnosed in those imported animals or border-zone animals examined. The OIE does not yet recognize

Moldova as FMD-free, however, as the EC's Health and Consumer Protection Directorate-General (DG-SANCO) characterizes Moldova's FMD and CSF surveillance programs as limited.

Newcastle disease is a List A OIE viral disease of poultry. The last outbreak of Newcastle disease occurred in Moldova in 1992. Moldova follows the standard practice of vaccinating essentially all poultry for Newcastle disease, along with imposing import and internal movement quarantines and destruction of birds serologically positive or exhibiting clear signs of the disease. As part of the disease monitoring process, very small numbers of birds were destroyed in flocks in which potential Newcastle disease symptoms were observed. Vaccination efforts dipped below total flock size from 1999 to 2003, but this did not result in observed outbreaks (see FigureA3-3).

Figure A3-3: Poultry vaccinated against Newcastle disease



Source: OIE 2005, FAO 2005.

Moldovan authorities have not detected *avian influenza,* despite continuing diagnosess of birds infected with the H5N1 strain in both Russia and Romania. Moldova blocks imports of live poultry from Russia and Romania and imposes trade restrictions on live poultry and poultry products on countries that notify the OIE of outbreaks of low-pathogenic types of avian influenza. Moldova sits on the same wild bird flyway presumed to have carried HPAI into Romania, however.

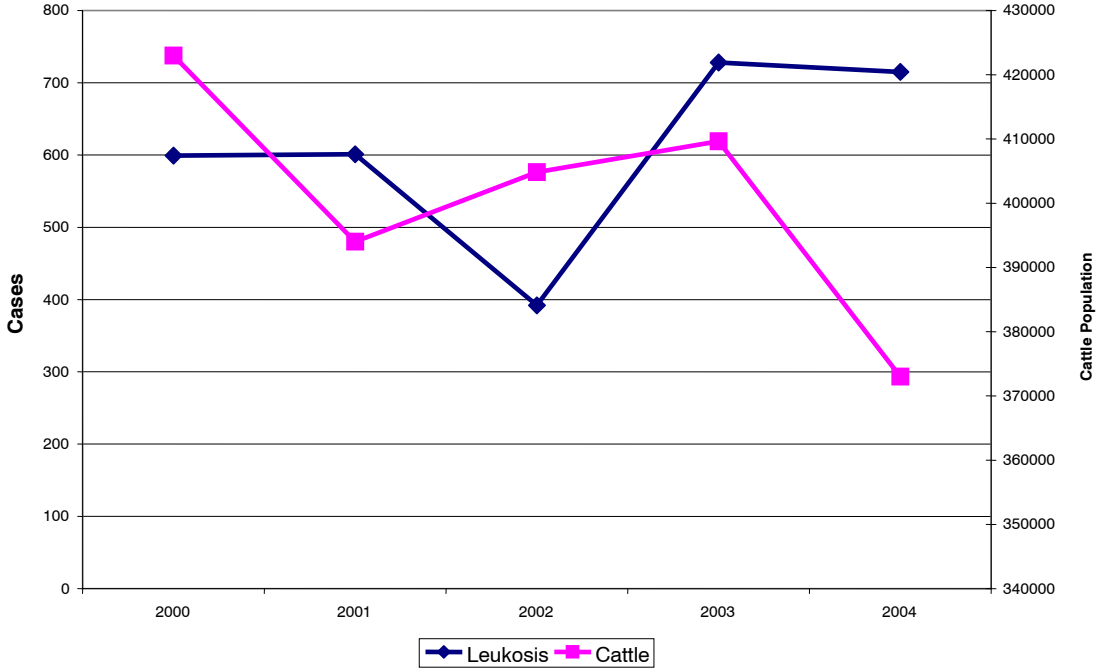
Statistics on cattle health in Moldova show remarkably low levels of *tuberculosis* and *brucellosis*. The EC has concluded that Moldova's annual TB testing is unreliable, however, and that follow-up testing of cattle and herds on affected farms is delayed too long.

The increasing level of *bovine leucosis* (a type of leukemia), as depicted in Figure A3-4, is a concern, however, even as cattle numbers decline.[62] In addition, veterinarians in Moldova have concluded that the increase is due to negligent practice on their part, in terms of needle sanitation and handling practices during inspections and vaccinations. Vaccination has been prohibited to try to eliminate this disease from Moldova. Stamping out by destroying or slaughtering infected

[62] Enzootic bovine leucosis may have been introduced by imports of live cattle from the United States in the early 1990s, highlighting weakness in animal quarantine that the DG SANCO notes continues to this day.

animals is part of the Moldovan national program, but veterinarians find it difficult to take a farmer's total "herd" of one or two cows for slaughter with only sale of the meat from the animals as compensation. Thus, the reservoir of the disease is maintained and propagated within the national herd, especially among smallholders. This is a common problem in poor countries where state resources do not permit an even-handed application of livestock disease-control strategy, but it underscores the difficulty in controlling and eradicating livestock diseases in Moldova.

Figure A3-4: Bovine leucosis



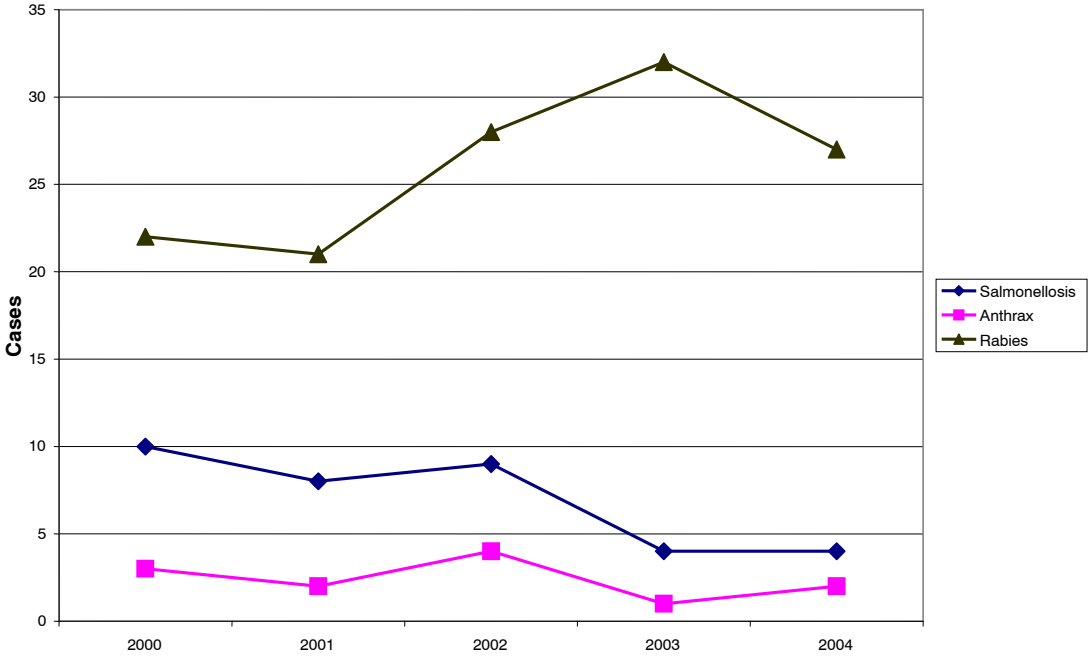
Source: Directorate General for Veterinary Medicine and State Veterinary Inspectorate 2005; FAO 2005.

This point is reinforced by the trends in some diseases of zoonotic importance in Moldova. Figure A3-5 shows new cases among all animal species of *salmonellosis, anthrax,* and *rabies*. Anthrax cases are infrequent and the incidence of salmonella diagnosis is low and relatively steady over time, but rabies is increasing. Dogs, cats, wild animals (foxes), and cattle account for the majority of rabies cases. Levels of vaccination among domestic animals, especially dogs and cats, and capacity to put out wild animal vaccine baits varies greatly from year to year.

A more complicated situation exists for *echinoccosis* in animals, a helminth parasite that cycles among wildlife, domestic livestock, and pets before dead-ending in humans. Figure A3-6 shows the levels of echinoccosis in the main domesticated livestock and in humans. It can take several years for cysts to form in humans and for symptoms to develop to the point the disease is diagnosed, providing a partial explanation for the lag in the growth of human cases following peaks in livestock cases. The continued growth in human cases is difficult to reconcile with the progressive decline in large-stock cases, however. Data provided by the Moldovan Veterinary Inspectorate (2005) on the total animal cases of echinoccosis, including wild fauna, are depicted in Figure A3-7 showing substantial helminth pressure in the environment. If experience elsewhere in Eastern Europe is an indication, it is likely that children in rural areas and towns are picking up the infectious stage of *Echinoccocus* spp. from domestic dogs and from frequent exposure to dirt on which *Echinoccocus* is shed by pets. Deworming dogs and improving offal disposal at slaughter are two major preventive measures. Implementing these measures would require

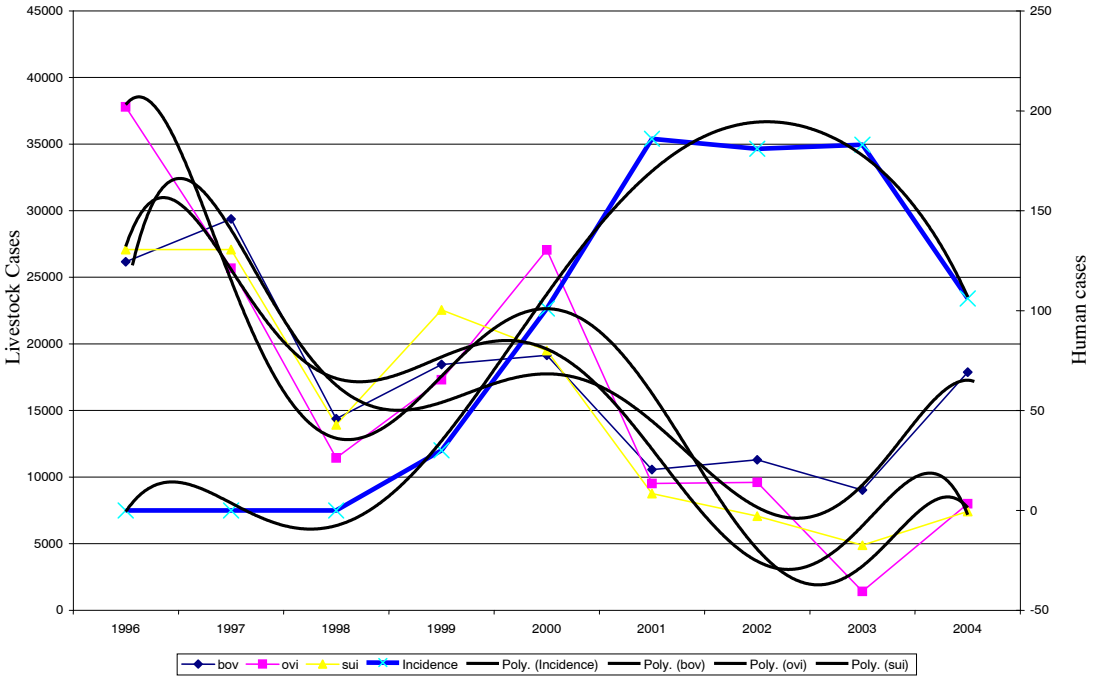
coordinated effort (strategy, staff, and budget) among public health, veterinary, environmental, and district (rayon) officials.

Figure A3-5: Salmonellosis, anthrax, and rabies



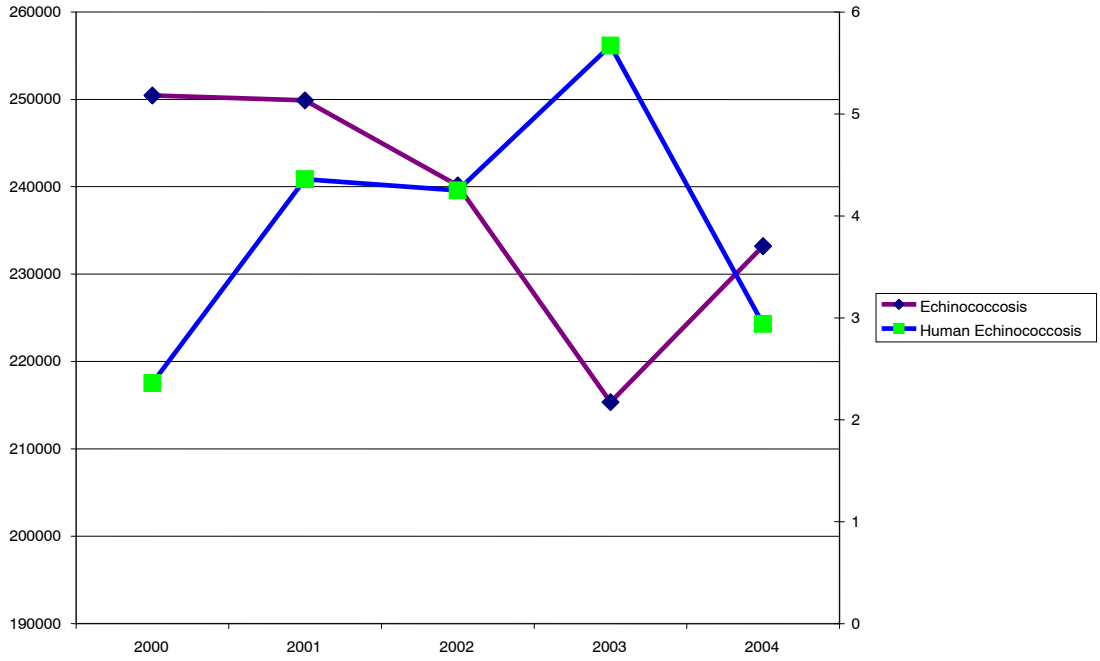
Source: Directorate General for Veterinary Medicine and State Veterinary Inspectorate 2005.

Figure A3-6: Echinoccosis cases: cattle (bov), sheep (ovi), swine (sui), and human incidence



Note: The apparent decline in human incidence (blue line) in 2004 is an artifact probably caused by the unavailability of 2004 public-health statistics from Transnistria. The curves are the result of polynomial smoothing.
Source: OIE 2005, CPM 2005.

Figure A3-7: Total animal (livestock, companion animals, and wildlife) and human echinoccosis cases



Note: The apparent decline in human incidence in 2004 is an artifact probably caused by the unavailability of 2004 public-health statistics from Transnistria.
Source: Directorate General for Veterinary Medicine and State Veterinary Inspectorate 2005; CPM 2005.

Appendix 4 Laws and Regulations on SPS in Moldova*

General laws
Law on Food Products, No. 78-XV/2004
Law on Consumer Protection, No. 105-XV/2003

Sanitary and epidemiological protection
Law on Sanitary and Epidemiological Protection of the Population, No. 1513-XII 16.06.93, amended by No. 727/06.02.96; No. 788/26.03.96
Regulation on the Sanitary Epidemiological Provision of the Population, Approved by the Government, Decision No. 423 of 03.05.2000
Norms and Sanitary Rules Regarding Food Additives, Approved by the Ministry of Health, 2001
Norms on Labeling of Food Products, Approved by HG No. 996/2003
Sanitary Norms on Nutrition Labeling, Labeling of Products with a Special Dietetic Destination, Products Obtained from Genetically Modified Organisms, Approved by the Ministry of Health, 2004
Hygiene Norms of Migration of Toxic Elements from Confections that Contact Food Products and Detection Methods, Approved by the Ministry of Health 2003
Hygiene Norms on Residues of Phytosanitary Products and Fertilizers, 2003
Regulation on Management of Phytosanitary Products and Fertilizers within the Domestic Economy, 2003
Ministry of Health and Social Protection Order No. 61 of 04.03.05, on continuous improvement of the Sanitary Hygienic Laboratory Service in the Republic of Moldova, 01.06.2005
Hygienic Norms on Residues of Phytosanitary Preparations in the Environment, Item 09.03.2005
Regulation on Management of Phytosanitary Products and Fertilizers in the National Economy, 09.03.2005

Phytosanitary quarantine
Law on Phytosanitary Quarantine, No. 506-XIII 22.06.95
Government Decision on Establishment of State Services of Phytosanitary Quarantine, No. 697/10.10.95, amended by No. 641/25.11.96; No. 515/05.06.97; No. 505/15.05.98
Rules on the Protection of the Republic of Moldova Territory against the Entry or Introduction from Other Countries of Quarantined Pests, Pathogenic Agents of Plant Diseases, and Weeds.
Law on the Protection of Plant Varieties, No. 915, 11.07.96
Law on Fertilizer on Phytosanitary Products and Fertilizers, No. 119, 22.04.2004
Government Decision on Prevention of Illegal Import and Marketing of Chemical and Biological Products Destined for Use in Agriculture and Forestry in the Territory of the RM, No.740, 02.11.95
Government Decision on Approval of the Regulation on the Import, Marketing and Use of Phytosanitary Substances, No.599, 21.06.2000
Law on Vineyards and Vines, No. 131, 02.07.94
Government Decision No. 760, 10.11.95, on production of wine and other wine products with appellation of origin
Law on Fruit Growing, No. 728, 06.02.96
Seed Law, No.659, 29.10.99

* This list includes some of the main laws and regulations pertaining to sanitary and phytosanitary measures in Moldova and is not necessarily complete. It is based on information provided by the Ministries of Health and of the Economy during Moldova's accession to the WTO; Moldova's Official Gazette; and interviews.

Government Decision No.360, of 27.03.2002, on approval of the regulation on the import and export of seed and seedlings
Law on Protection of Crop Varieties, No. 915, 11.07.1996
Law on the Regime of Noxious Products and Substances, No.1236, 03.07.1997
Law on Licensing Some Types of Activities, No. 451, 30.07.2001
Law on Biological Security, No.755, 21.12.2001

Veterinary activity
Law on Veterinary Activity, No. 1539-XII (23.06.93)
Government Decision on Veterinary Statute of the Republic of Moldova, No. 378, 22.06.98
"Sanitary and veterinary norm regarding the sanitary and veterinary conditions for organization and operation of veterinary pharmaceutical units," published in the Official Gazette of the Republic of Moldova, No.56-60, 09.04.2004
"Sanitary and veterinary norm on health condition for production and sale of fresh meat" (European Council Directives 64/433/CEE of 26.06.1964 and 91/497/CEE of 29.07.1991). [The given norm is already approved but couldn't be published in the Official Gazette of the Republic of Moldova due to lack of funds.]
"Sanitary and veterinary norm regarding sanitary and veterinary conditions for production and sale of fish products" (European Community Directive 91/493/CEE of 22 July 1991), published in the Official Gazette of the Republic of Moldova No.218–223 of 3 December 2004 and No. 226 –232 of 10 December 2004.

Laws and regulations governing technical barriers to trade, standards, etc.
Law on Product Conformity Assessment, No. 186-XV of 24.04.2003
Decision of the Government on the Creation of the Accreditation System for Product Conformity Assessment, No. 1646 of 31.12.2003
Law on Technical Barriers to Trade, No. 866 of 10.03.2000
Law on Standardization, No. 590-XIII of 22.09.95
Decision of the Government on the Transition to Voluntary Standardization, No. 702 of 04.06.2002
Decision of the Government on Approval of the Regulation Regarding the Secession of Production and/or Sale of Unstandardized and Low Quality Products (Services, Process), Withdrawal from Circulation of Forfeited Products, and Destruction of Products (Services, Processes) that are Hazardous to the Life and Health of Consumers and Environment, No. 1300 of 31.12.98

Laws and regulations still in draft
Draft Law on Veterinary Services
Regulation Regarding the Approval of the New Types of Food Products and Contact Materials with Food Products
Regulation on the Food Products Testing, Contact Materials with Other Dangerous Food Products, Special Usage, or their Elimination
Amendments and Accomplishments to the Administrative Contraventions Code
Government Decision on the Institutionalization of the Rapid Alert System and to Approve the Regulation on Its Activity
Sanitary Norms on Contaminant and Residue Composition in Food Products
Sanitary Norms on Food Product Hygiene
Sanitary Rules on Detecting, Tracking, and Researching of Food Toxic Infections and on Diseases with a Food Factor of Transmission
Strategy on Food Safety
Draft Amendment to the Law on Standardization, No. 590-XII/ 22.09.95

Appendix 5 List of Agricultural Products to Be Certified for Mandatory Conformity

No.	*Tariff position*	*Name of product (of product group)*
1.	0401	Milk and sour cream, nonconcentrated, sugar-free or other sweeteners (edulcolorants)
2.	0402	Milk and sour cream made of milk, concentrated or with sugar or other sweeteners (edulcolorants)
3.	0403	Sour milk, curdled milk and sour cream, yogurt, kefir, and other varieties of fermented or tart (acid) milk and sour cream, even concentrated, with either sugar or other sweeteners (edulcolorants) or flavors, or with fruits, nuts, or cacao
4.	0405	Butter and other milk fat substances; milk-based paste for sandwiches
5.	0406	Cheese and ewe-cheese
6.	0409 00 000	Bee honey
7.	0710	Cooked, boiled or steamed, and frozen vegetables
8.	0901	Coffee, even roasted or decaffeinated coffee; coffee skin or shell; coffee substitutes containing coffee, regardless of the proportion of substances in the mixture
9.	0902	Tea and flavored tea
10.	From 1101 00	Wheat or meslin flour
11.	From 1102	Flour of grains other than wheat or meslin
12.	1103	Cereals, semolina or clustered in form of cereal pellets
13.	From 1104	Cereal beans processed differently (for instance: unskinned, pressed beans, cereal flakes, cut, crashed or smooth grinded cereals), and cereal germs (whole, pressed, in flakes or crushed)
14.	1507	Refined but not chemically modified oil made from soy beans or soy beans fractions
15.	1508	Oil of ground nut or its fractions, refined but not chemically modified
16.	1509	Oil of olive and its fractions, refined but not modified chemically
17.	From 1512	Oil of sunflower seeds, saffron, or cottonseeds, and their fractions, even refined but not modified chemically
18.	From 1517	Margarine; mixtures or foodstuffs of fat or animal or vegetable oil or fractions of various fat or oils
19.	1601 00	Sausage and similar products made from meat, trimmings, or blood; similar food products
20.	From 1602	Canned products made from meat, trimmings, or blood
21.	1604	Fish products or canned fish; caviar and substitutes made from fish caviar
22.	1605	Crustacean, mollusk (shellfish), and other aquatic invertebrates cooked or canned
23.	1701	Sugar made of cane or sugar beet and saccharine clean from chemical standpoint, in solid form
24.	1704	Sugar-like products (including milk chocolate) that do not contain cacao
25.	1806	Chocolate and other food preparations containing cacao

26.	From 1902	Spaghetti, macaroni, noodles, lasagna, gnocchi, ravioli, cannelloni
27.	From 1905	Bakery products, biscuits, and pastry even with cacao; waffles with top coating; dried pasta of puff flour, starch, or fecula (starch flour)
28.	2001	Vegetables, fruit, and other edible parts of plants cooked or canned in vinegar or acetic acid
29.	2002	Tomatoes prepared or canned in substances other than vinegar or acetic acid
30.	2003	Mushrooms and truffles, prepared or canned in substances other than vinegar or acetic acid
31.	From 2004	Vegetables prepared or canned with substances other than vinegar or acetic acid, frozen
32.	From 2005	Vegetables prepared or canned other than with vinegar or acetic acid, nonfrozen
33.	2006 00	Vegetables, fruit, pits (seeds), fruit peel, and other parts of the plants prepared with sugar (soaked with sugar syrup, glazed or crystallized)
34.	2007	Jams, sweets, jellies, candies, fruit, or seed paste or puree prepared by boiling, with or without sugar or other sweeteners (edulcolorants)
35.	From 2008	Fruit, nuts, and other edible parts of plants prepared or canned otherwise, with or without sugar or other sweeteners (edulcolorants) or alcohol
36.	2009	Nonfermented fruit juices (including wine pressing) and vegetable juice, without alcohol, with or without sugar or other sweeteners (edulcolorants)
37.	2105 00	Ice cream and other forms of edible ice, with or without cacao
38.	From 2201	Water, including natural or artificial mineral water and aerated (soda) water not containing sugar or other sweeteners and flavorings
39.	From 2202	Water, including mineral water and aerated water containing sugar or other sweeteners or flavorings
40.	2203 00	Beer fermented from malt
41.	2204	Wine made from fresh grapes, including wine with added alcohol; wine pressing
42.	2205	Vermouth and other wines made from fresh grapes in which herbs and other flavorings have been steeped
43.	2206 00	Other fermented beverages (for instance, obtained from fresh pears, cider, or hydromel); mixtures of fermented beverages and nonalcoholic beverages
44.	2207	Nondenatured ethyl alcohol with 80% or more of alcohol concentration, depending on the volume; ethyl alcohol and other denatured distilled alcohol of any concentration
45.	2208	Nondenatured distilled ethyl alcohol with a concentration of alcohol up to 80%, depending on the volume; brandy; liquor and other alcoholic beverages

Source: Government Decision 1469/30.12.2004 on approval of the nomenclature of products from the given area to be certified for mandatory conformity, Official Gazette 1-4/14, 07.01.2005

Appendix 6 Information Sources, Enquiry Points, and Consultations

Information sources

Information and instructions on SPS measures are published in Moldova's official journals: *Monitorul Oficial* and *Buletinul Standartisarii.*

WTO enquiry points

Agreement on Technical Barriers to Trade:
Information Centre of Standardization and Certification
National Institute of Standardization and Metrology
28, E. Coca St.
Chisinau, MD 2039
Phone: (373-22) 750981
Fax: (373-22) 750981
E-mail: insm@standard.md

Agreement on Sanitary and Phytosanitary Measures:
National Center for Preventive Medicine
Ministry of Health and Social Protection
Street: Gh. Asachi 67A
Chisinau, MD 2028
Phone: (373-22) 574642
Website: www.sanepid.md.

International organizations

International Organization for Standardization (member):
National Institute of Standardization and Metrology
28, E. Coca St.
Chisinau, MD 2039
Phone: (373-22) 750981
Fax: (373-22) 750981
E-mail: insm@standard.md

International Plant Protection Convention (NPPO unofficial):
Main State Phytosanitary Quarantine Inspectorate
Ul. Yaloveni, 100B
Chisinau, MD 277070
Phone: (373-22) 284417
Fax: (373-22) 284434

CODEX Alimentarius (member):
Committee CODEX Alimentarius
National Centre for Preventive Medicine
Ministry of Health and Social Protection
Gh. Asachi 67A, No. 401
Chisinau, MD 2028
Phone: (373-22) 574642

Website: www.codex.mednet.md

Office International des Epizooties (OIE) (member):
General Veterinary Medicine Division and State Veterinary Inspection
Ministry of Agriculture and Food Industry
Stefan cel Mare, 162, of. 508
Chisinau, MD 2012
Phone: (373-22) 210156
Fax: (373-22) 210178

International Laboratory Accreditation Cooperation (affiliate):
Center for Accreditation and Product Conformity Assessment
Ministry of Economy and Trade
Bd Stefan cel Mare 180, No 1200
Chisinau, MD 2004
Phone: (373-22) 210325
Fax: (373-22) 210316
E-mail: cadecp@mtcl.md

Appendix 7 Cost Estimates for Moldova's SPS Action Plan

The recommendations in this action plan fall into three major groups: actions for public sector improvement and capacity building, actions for private sector upgrading, and actions under related programs.

Implementation of the recommended actions will require a combination of technical assistance, training and workshops, and equipment and supplies (see Table A7-1). The technical assistance is usually supplied by both international and local consultants. For purposes of estimation, monthly rates of US$25,000 and US$3,000 are assumed for international and for local consultants, respectively. An international travel fare of US$2,000 per trip is used in the computations. For most actions, greater participation may be required of local consultants, with international consultants visiting at the beginning of an activity to help establish frameworks and parameters, leaving the information-gathering to their local counterparts, and returning for the completion of the activity. (In some actions, a visit by international consultants midway through the activity provides opportunity for supervision and updates.) Training activities may include study tours abroad or training programs held in foreign institutions either for policymakers learning to adapt concepts in Moldova or for practitioners learning to apply them. The most productive training programs abroad are those held in operational rather than classroom settings, such as learning diagnostic techniques in a laboratory in which they are regularly performed. Training activities can also be done effectively as part of twinning projects. Workshops may be needed to familiarize government staff or other stakeholders with new policies and procedures. Workshops with about 100 participants are estimated to cost US$2,000 (about US$20 per participant); when an international resource person conducts the workshop, the estimated cost is US$5,000. Certain actions, mostly diagnostic and other operational activities, require computers (both hardware and software), laboratory and other equipment, and tools.

The numbers below are rough figures based on estimates of the number of consultants needed, the duration of work to be undertaken, and the training and equipment required.

The recommended action concerning elimination of national conformity assessment certificates (Action 9) is included in the table but was deemed to incur no cost.

Table A7-1: Breakdown of cost estimates for the Moldova SPS action plan

Public Sector				
Recommended action	**Technical Assistance**	**Training/ Workshops**	**Equipment/ Supplies**	**TOTAL (US$)**
Setting up a coordination unit				
1. Establish a coordination unit consisting of a chief coordinator and contact points from various government agencies involved in SPS management.	International SPS coordinator, 36 months + 10 travels: 36 x $25,000 = $900,000 10 x $2,000 = $20,000		Computers, equipment: $100,000	**1,020,000**
Institutional restructuring				
2. Identify areas of overlap and gaps in responsibilities between agencies in managing food safety; assess the best option for Moldova, a single agency for food safety or a multi-agency structure but with improved alignment among the present services and clearer definition of roles and responsibilities of each agency; and make a plan to implement the new structure.	1 international consultant, 4 months, 2 travels: 4 x $25,000 = $100,000 2 x $2,000 = $4,000 1 local consultant, 12 months: 12 x $3,000 = $36,000	Workshop with international resource person: $5,000	$3,000	**148,000**

Recommended action	Technical Assistance	Training/ Workshops	Equipment/ Supplies	TOTAL (US$)
Economic analysis and risk assessment				
3. Assess Moldova's competitiveness in fish, dairy, and livestock products to determine the potential benefits of investing in third-country status for these products.	1 international consultant, 2 months: 2 x $25,000 + $2,000 = $52,000 1 local consultant, 4 months: 4 x $3,000 = $12,000	Workshop: $2,000		**66,000**
4. Conduct cost-benefit analysis of current livestock investment strategy of government and donors.	1 international consultant, 2 months: 2 x $25,000 + $2,000 = $52,000 1 local consultant, 3 months: 3 x $3,000 = $9,000	Workshop: $2,000		**63,000**
5. Provide assistance to develop and train a core group of risk assessors.	1 international consultant, 2 months: 2 x $25,000 + $2,000 = $52,000 1 local consultant, 4 months: 4 x $3,000 = $12,000	International training for 5 persons @ $30,000: $150,000	$6,000	**220,000**
Harmonization of the regulatory system				
6. Prepare a program for replacing existing regulatory system with a system compliant with international standards and good practice for a market economy (including resources needed and methods and principles) with priorities on fruit, vegetable, and nut regulations and voluntary standards. Provide support to the regulation-setting task force over the next 2 to 3 years.	1 international consultant, 8 months, 4 travels: 8 x $25,000 = $200,000 4 x $2,000 = $8,000 1 local consultant, 36 months: 36 x $3,000 = $108,000	Training abroad + workshop with international resource person: $200,000	Computers and translation: $200,000	**716,000**
Certification				
7. As the Ministry of Health completes the development of the more important horizontal technical regulations regarding food safety, conformity assessment certificates for those food products should no longer be mandatory. In the meantime, for products requiring mandatory assessment, private bodies accredited by the Accreditation Center should be allowed to issue legally valid conformity assessment certificates.	1 international consultant, 1 month: $25,000 + $2,000 = $27,000 1 local consultant, 2 months: 2 x $3,000 = $6,000	Workshop: $2,000		**35,000**
8. Review the veterinary certification process. Veterinary certificates should only be issued once for products before entering the market at border points, slaughter points, and meat- packing facilities. Veterinary inspection of the finished or processed good for consumption made from products that have already passed veterinary inspection should be discontinued, except in cases of calamities. Programs for veterinary control of the informal market should be based on risk assessment.	1 international consultant, 3 months, 2 travels: 3 x $25,000 = $75,000 2 x $2,000 = $4,000 1 local consultant, 6 months: 6 x $3,000 = $18,000	Workshop with international resource person: $5,000	$3,000	**105,000**

Recommended action	Technical Assistance	Training/ Workshops	Equipment/ Supplies	TOTAL (US$)
Certification (cont.)				
9. The Ministry of Economy and the Ministry of Finance/ Moldovan Department of Customs should issue letters eliminating the requirement for national conformity assessment certificates for exports at border checkpoints.				
Accreditation				
10. Evaluate the current practices of the Accreditation Center for conformance with current and projected trading partners' accreditation standards, developing an action plan for the recognition of the Accreditation Center by the European Union, and helping the Center develop a training program on EU requirements for Moldovan laboratories.	1 international consultant, 1 month: $25,000 + $2,000 = $27,000 1 local consultant, 2 months: 2 x $3,000 = $6,000	Study tours abroad + training program + workshops: $130,000		**163,000**
Laboratory system				
11. Evaluate Moldova's laboratory structure and help develop a strategic plan for the consolidation and future development of Moldova's laboratories.	3 international consultants, 1 month each, 2 travels each: 3 x $25,000 = $75,000 3 x 2 x $2,000 = $12,000 3 local consultants, 3 months each: 3 x 3 x $3,000 = $27,000	Workshops with international resource person: $10,000		**124,000**
12. Laboratory reinforcement is needed to enable Moldova to deal with the rapidly increasing demands for improved surveillance and monitoring for food safety and agricultural health and to improve the scientific basis for mandatory regulations and voluntary standards. Benefit-cost analysis should be used to determine to what level national public capacity should be developed, compared to use of contract private or regional facilities for high-cost, low-volume analyses.	1 international consultant, 3 months, 2 travels: 3 x $25,000 = $75,000 2 x $2,000 = $4,000 1 local consultant, 6 months: 6 x $3,000 = $18,000	International training + workshop with international resource person: $175,000	$700,000	**972,000**
13. Consolidate the veterinary laboratory system at central and *rayon* levels to meet restructured monitoring, surveillance, diagnostic, and certification strategies, based on priority needs and available budgetary support.	1 international consultant, 2 months, 2 travels: 2 x $25,000 = $50,000 2 x $2,000 = $4,000 2 local consultants, 5 months each: 2 x 5 x $3,000 = $30,000	Workshops with international resource person: $10,000	$500,000	**594,000**
Inspection, monitoring and surveillance				
14. Evaluate inspection, monitoring, and surveillance programs with regard to priority -setting and cost effectiveness; propose methods for design, and formulate a program for the first year.	3 international consultants, 2 months each, 2 travels each: 3 x 2 x $25,000 = $150,000 3 x 2 x $2,000 = $12,000 3 local consultants, 6 months each: 3 x 6 x $3,000 = $54,000	Study tours abroad + workshops with international resource person: $100,000	Computers, adjustment of survey and testing equipment: $400,000	**716,000**

Recommended action	Technical Assistance	Training/ Workshops	Equipment/ Supplies	TOTAL (US$)
Inspection, monitoring and surveillance (cont.)				
15. Adjust law and policy to make the CPM responsible for food safety in the Moldovan marketplace with consolidation of authority for market testing and inspection of all food products as well as sales points for food and beverages. *Note*: The recommended equipment includes upgrades in a subset of municipal and town market labs; sampling tools and equipment; rapid test methods; and some equipment to improve handling of disposal of diseased carcasses and meat and other contaminated food products.	1 international consultant, 3 months, 2 travels: 3 x $25,000 = $75,000 2 x $2,000 = $4,000 1 local consultant, 6 months: 6 x $3,000 = $18,000	Study tours abroad + workshop: $202,000	$500,000	**799,000**
Border control				
16. Assess whether Moldova's SPS control systems and border procedures meet the WTO rules of nondiscrimination, with a view towards developing an action plan for bringing these systems into conformance with international requirements, as necessary.	1 international consultant, 2 months, 2 travels: 2 x $25,000 = $50,000 2 x $2,000 = $4,000 1 local consultant, 4 months: 4 x $3,000 = $12,000	Workshop with international resource person: $5,000		**71,000**
17. Judiciously improve the ICT of the veterinary and plant inspection and quarantine services to ensure compatibility with the IT system of the Customs Service and to improve the accuracy and transparency of their data management for veterinary and plant quarantine inspection.	1 international consultant, 2 months, 2 travels: 2 x $25,000 = $50,000 2 x $2,000 = $4,000 1 local consultant, 4 months: 4 x $3,000 = $12,000	Workshop with international resource person: $5,000	$250,000	**321,000**
18. Improve veterinary and plant inspection and quarantine border-crossing sampling and diagnostic capacity (pilot tools, equipment, and procedures for a selected set).	2 international consultants, 2 months each, 1 travel each: 2 x 2 x $25,000 = $100,000 2 x $2,000 = $4,000 1 local consultant, 6 months: 6 x $3,000 = $18,000	Foreign training + workshop with international resource person: $100,000	$500,000	**722,000**
19. Study the benefits, costs, and governance requirements for privatization of fumigation and treatment services for plant quarantine, perhaps combined with restructured truck and railroad car sanitation and fumigation services.	1 international consultant, 3 months, 2 travels: 3 x $25,000 = $75,000 2 x $2,000 = $4,000 1 local consultant, 5 months: 5 x $3,000 = $15,000	Foreign training + workshop with international resource person: $50,000		**144,000**
20. Following a benefit and cost assessment, draft a plan and budget to upgrade the Central Plant Inspection and Quarantine Laboratory and selected *rayon* control laboratories to enable them to respond to WTO SPS requirements.	1 international consultant, 3 months, 2 travels: 3 x $25,000 = $75,000 2 x $2,000 = $4,000 1 local consultant, 9 months: 9 x $3,000 = $27,000	Foreign training + workshop with international resource person: $200,000	$600,000	**906,000**
Stamping out and emergency response				
21. Design an improved system to support the stamping out of livestock diseases, with a special emphasis on zoonoses, with the understanding that budgetary and technical constraints force Moldova to prioritize carefully; and initially focus on a limited number of diseases.	1 international consultant, 2 months, 2 travels: 2 x $25,000 = $50,000 2 x $2,000 = $4,000 1 local consultant, 6 months: 6 x $3,000 = $18,000	Workshops with international resource persons: $10,000	$350,000	**432,000**

Recommended action	Technical Assistance	Training/Workshops	Equipment/ Supplies	TOTAL (US$)
Reorganization of veterinary services				
22. Separate public and private functions in veterinary services and provide support for the privatization of curative veterinary services.	1 international consultant, 3 months: 3 x $25,000 + $2,000 = $77,000 1 local consultant, 3 months: 3 x $3,000 = $9,000	Workshop: $2,000		**88,000**
Plant health and pesticide management				
23. Conduct cost-benefit analysis and design a system for pesticide container collection and disposal.	1 international consultant, 2 months, 2 travels: 2 x $25,000 = $50,000 2 x $2,000 = $4,000 1 local consultant, 5 months: 5 x $3,000 = $15,000	Foreign training + workshop with international resource person: $50,000	$100,000	**219,000**
24. Design and train staff in risk assessment related to the introduction of new phytosanitary means and fertilizers to reorient registration policy.	1 international consultant, 2 months: 2 x $25,000 + $2,000 = $52,000 1 local consultant, 3 months: 3 x $3,000 = $9,000	Workshop: $2,000		**63,000**
Public information and awareness				
25. Initiate food safety educational campaigns for government staff, farmers, food handlers and consumers.	1 international consultant, 3 months, 2 travels: 3 x $25,000 = $75,000 2 x $2,000 = $4,000 1 local consultant, 6 months: 6 x $3,000 = $18,000	Workshop: $2,000	Media campaign: $500,000	**599,000**
26. Expand antiparasitic disease campaigns carried out by rayon councils with the support of the local CPM and Veterinary Services. These should be extended beyond human curative treatment to preventive actions with domestic animals (especially dogs) and livestock, that is, the segregation and fencing of slaughter facilities. National authorities can help with the design of these programs, but community-implemented parasite control programs tend to be more successful than those driven from the center.	1 international consultant, 3 months, 2 travels: 3 x $25,000 = $75,000 2 x $2,000 = $4,000 1 local consultant, 5 months: 5 x $3,000 = $15,000	Workshops: $6,000	Deworming medicines for children, dogs, and livestock in pilot districts; public education campaigns: $300,000	**400,000**
Public sector total	**3,269,000**	**1,425,000**	**5,012,000**	**9,706,000**

Private Sector				
Recommended Action	**Technical Assistance**	**Training/ Workshops**	**Other support**	**TOTAL (US$)**
27. Develop a support program for upgrading food businesses. Private sectorupgrading projects may cover plant renovation, hygiene facility improvement, quality management, water supply, waste management and supply chain organization. The support should include comprehensive improvement plans for the convergence toward EU principles of hygiene in food processing, accompanied by timetables and a financing plan.	International consultants, 5 months and 3 travels in total: 5 x $25,000 = $125,000 3 x $2,000 = $6,000 Local consultants, 18 months in total: 18x $3,000 = $54,000	Training workshop and study tour abroad on food safety and quality management, supply chain organization, and SPS requirements in export markets $230,000	2,600,000	3,015,000
Private sector total	**$185,000**	**$230,000**	**2,600,000**	**3,015,000**
Action under related programs				
Recommended Action	**Technical Assistance**	**Training/ Workshops**	**Other support**	**TOTAL (US$)**
28. Provide support for packing, transport, insurance, and disposal of highest risk pesticides.	1 international consultant, 3 months: 3 x $25,000 + 2,000= $77,000 1 local consultant, 3 months: 3 x $3,000 = $9,000	Workshops with international resource persons: $10,000	5,000,000	**5,096,000**
Related program total	**$86,000**	**$10,000**	**$5,000,000**	**5,096,000**

Appendix 8 SPS Activities in Moldova by Donors

The Central Agricultural Market Information Bureau (CAMIB). CAMIB, a Moldovan NGO, was created under the EU/TACIS program in 1999. CAMIB provides a wide range of marketing and export promotion services, including a trade website and a retail/wholesale price database for 40 products traded in Moldova and surrounding countries. CAMIB also carries out commodity studies (e.g., fruits, vegetables, wine, dairy, walnuts) of Moldovan and international markets, some of which are contracted by private companies. CAMIB's funding comes from international donors and from the private sector. (See www.camib.com.)

CAMIB has undertaken several projects related to SPS. In 2000, CAMIB organized a major conference in Moldova on meeting food standards in international trade; and in 2002, it conducted a comparative study of Moldovan legislation on veterinary and consumer protection vis-a-vis legislation in the EU. CAMIB's marketing studies often contain information on food standards and other requirements for entering overseas markets. Finally, CAMIB formed the Moldovan Center for Food Safety and Quality with funding from USAID under the Partnership for Food Industry Development (PFID) Project. The project is being implemented in partnership with Louisiana State University, the World Food Logistics Organization, and the International Center for Scientific Culture (Ukraine Branch).

The goals of the Center for Food Safety and Quality are to enhance the export potential of Moldovan food companies through the implementation of HACCP and to improve the Food Safety System of Moldova. The Center attempts to enhance the general awareness of food safety issues within Moldova and to foster harmonization of Moldovan food safety legislation with international requirements. CAMIB has 5 certified HACCP trainers on its permanent staff and provides Moldovan fish, meat, and poultry companies with HACCP training certified by the International HACCP Alliance and the National Sea-Food HACCP Alliance. Six companies have received this training, and one has obtained international certification. CAMIB is also affiliated with the International Institute of Food Safety and Quality of the Ukraine. (See www.camib.com/pfid.)

European Neighborhood Policy (ENP) and Food Security Program. Under the European Neighborhood Policy, Moldova and the EU have agreed to an Action Plan that lays out a comprehensive list of priorities for the two regions. Progress in meeting the priorities is measured by a set of mutually agreed indicators and is monitored under a separate Partnership and Cooperation Agreement. If the indicators and certain other macro conditions are met (per approval of the IMF), the EU will provide Moldova with grant funds for budgetary support. Originally, these funds were tied to food imports and support for vulnerable parts of the population, but they apparently can now be used more generally for agriculture and rural development. Food security grants are turned into local currency for the budget and are managed by the Ministry of Finance. Funding for 2005 is 10 million euros.

The Plan covers irrigation and the veterinary service and includes a number of chapters that will lead to further economic integration, including one on trade and regulatory reform. This chapter contains a subchapter on sanitary-phytosanitary issues. The goals are to increase food safety for Moldovan consumers and to facilitate trade through reform and modernization of the sanitary and phytosanitary system. Amongst the priorities are harmonization of the legal framework, food safety and agricultural health institutions, and Moldova's application for third-country status in the EU markets for fish, poultry, and milk products.

Specific SPS elements of the action plan are:

- ✓ Implement in full the requirements of the WTO agreements on SPS and TBT;
- ✓ Accede to the European and Mediterranean Plant Protection Organization and increase participation in the OIE, IPPC, and Codex Alimentarius;

- ✓ Assess and compare sanitary and phytosanitary control systems with EU and international requirements, particularly at the border;
- ✓ Draw up a comprehensive list of measures for gradual convergence toward EU principles of hygiene in food processing (animal products), accompanied by timetables and a financing plan, and begin the convergence process;
- ✓ Increase convergence of food law with EU food safety principles and EU food labeling requirements, and progressively abolish the premarket approval system for food products;
- ✓ Prepare first steps for setting up an animal identification and traceability system, particularly for cattle;
- ✓ Fulfill EU requirements on animal health and for the processing of animal products, per the EU's "General Guidance for third country authorities on the procedures to be followed when importing live animals and animal products into the European Union";
- ✓ Identify national reference laboratories in the SPS sector, with special attention on the necessary equipment, appropriate methods of analysis for pesticide and contaminant residues, and accreditation.

The Food Security Project is providing assistance on various aspects of the action plan. This includes a program to increase the artificial insemination rate from 5 percent to 30 percent with a goal of upgrading the gene pool and increasing yields, a pilot project with the help of Romania for the registration of bovine animals, and assistance on the new Veterinary Law.

The Government of Moldova seeks support in developing a series of subplans to implement each element of the Action Plan. These subplans would provide details of the implementation steps required of the Government and any required budgetary support. It should be noted that funding for implementation must be programmed and paid separately by the Government, since it is not tied to the EU grant. In other words, the Ministry of Agriculture must approach the Ministry of Finance and seek Parliamentary approval for budgetary line items related to implementation of the Action Plan. In some cases, the subplans may also require technical assistance.

Agribusiness Development Project (ADP). The Citizen's Network for Foreign Affairs (CNFA) of Washington, DC, currently has three USAID projects in Moldova:

- ✓ Warehouse Receipts, under which CNFA is helping to develop a legal framework for warehouse receipts in Moldova;
- ✓ Farmer-to-Farmer Program, under which volunteer agribusiness experts from the United States are brought to Moldova to assist small farmers, primarily on bringing produce to market; and
- ✓ The Agribusiness Development Project.

The Agribusiness Development Project is a new, 5-year, $19 million project funded by a USAID cooperative agreement with CNFA. The project focuses on high-value fruits and vegetables in five clusters: fresh, frozen, dried, canned/pickled, and niche products. The project addresses problems throughout the value chain, from production to table, and will provide technical assistance, training, and matching grants. Among the issues to be addressed are the implementation of quality standards, quality management, and brand development. The project will also conduct several marketing studies for accessing the CIS and EU markets.

In the past, CNFA also supported various veterinary activities in the Ministry of Agriculture with funding from the U.S. Department of Agriculture. The USDA provided equipment and supplies for veterinary service in rural areas, including artificial insemination, computers for the Ministry of Agriculture, and several years of funding for Moldova's participation in the OIE. CNFA appears to question the value of this assistance.

Competitiveness Enhancement Project. The Competitiveness Enhancement Project is a new World Bank project approved by the Board of Directors in October 2005. One component of the Project will provide US$9.21 million to strengthen the capacity of Moldova's MSTQ (metrology, standardization, testing, and quality) system by bringing it closer to EU standards and by helping Moldova meets its WTO commitments. Although the project focus is not SPS, the activities on general standard system will have impacts on the SPS system. The following assistance will be provided to the Moldovan government:

- ✓ Revising and strengthening relevant MSTQ regulations and implementing institutional reorganization;
- ✓ Building capacity in metrology by upgrading laboratories in the Institute for National Standardization and Metrology (INSM) and strengthening their institutional capacity;
- ✓ Upgrading the standards system through adoption and translation of the most frequently used standards and revising relevant regulations in line with international best practices;
- ✓ Strengthening the accreditation and certification capacity of Accreditation Center; and
- ✓ Improving the number and quality of testing services provided by the conformity assessment bodies to enterprises.

Counterpart institutions are the Ministry of Economy, Department of Standardization and Metrology, and the Accreditation Center. The project received board approval in October 2005.

Another component of this Competitiveness Enhancement Project facilitates enterprise access to MSTQ services (US$1.71 million). This component will help promote use of MSTQ services by enterprises, especially SMEs, through the use of the Matching Grants Scheme, which will provide enterprises with financial support on a matching basis for improving product quality by obtaining international certifications, such as ISO and HACCP, and upgrading technological processes.

Avian Influenza Control and Human Pandemic Preparedness and Response (AIHP) Project. This new World Bank project, part of the Global Program for Avian Influenza (GPAI), was approved in June 2006. With a total of US$10.6 million financing, the project's overall objective project is to minimize the threat posed to humans by the highly pathogenic avian influenza (HPAI). To achieve this, the project will support surveillance for outbreaks of such diseases, preparation for outbreaks, and control of outbreaks among humans and animals.

The project has four components:

- ✓ Animal Health, with 3 subcomponents: animal disease surveillance and diagnosis; animal HPAI control and outbreak containment; and a compensation fund;
- ✓ Human Health, with 3 subcomponents: human health capacity building; human HPAI testing; and human health system response;
- ✓ Public Information and Awareness: implementation of a three-stage strategic communication plan, including (i) a pre-epidemic campaign to promote health and safe behaviors to reduce risks to children, families, households, and communities and to promote responsible media reporting to avoid panic and misinformation; (ii) an intensive communication campaign during the pandemic alert, to begin immediately if and when human transmission is confirmed; and (iii) post-epidemic communication support to promote recovery.
- ✓ Implementation Support and Monitoring and Evaluation: provision of technical and financial support for project management, implementation, and monitoring and evaluation.

Appendix 9 People Interviewed or Consulted for This Report*

Moldovan government agencies and their subordinate units

Anatolie Spivacenco, Vice Minister, Ministry of Agriculture and Food Industry (MAFI)
Ion Cretzu, Head, Food Industry and Technical Regulations Division, MAFI
Veronica Tertea, Sr. Specialist, Agrochemical, Ecology and Plant Protection Division, State Plant Protection Inspectorate, MAFI
Iurie Senic, Specialist, State Plant Protection Inspectorate, MAFI
Dumitru Erhan, Director General, State Sanitary Veterinary Service, MAFI
Roman Moscalic, Deputy Director, Republican Veterinary Diagnosis Center, MAFI
Filip Maiduc, Head of the Veterinary Legislation Harmonization, MAFI
Mihail Grosu, consultant, Food Industry and Technical Regulations Division, MAFI
Nicolai Pamujac, Director, State Center for Certification and Approbation of Phytosanitary Means and Fertilizers

Iurie Panzaru, Deputy Director, National Center of Preventive Medicine
Ana Volneanschi, Deputy Director, National Center of Preventive Medicine
Galina Obreja, Head of Food Hygiene Department, National Center of Preventive Medicine
Cobzaru Olga, Laboratory Head, Central Sanitary-Hygienic Laboratory, National Center of Preventive Medicine
Svetlana Prudnicionoc, Laboratory Head, Central Laboratory of Sanitary Microbiology, National Center of Preventive Medicine
Ion Bahnarel, General Director, Main State Sanitary Inspector, National Scientific and Applied Center of Preventive Medicine

Lidia Jitaru, Deputy Head of Conformity Division, Standardization and Metrology Service
Alexandrov Aurelia, Deputy Head of Standardization Division, Standardization and Metrology Service
Maria Bizgu, Head of Division of State Supervision and Consumer's Protection, Standardization and Metrology Service
Ghorghe Gangura, Head of Standardization Service, Food Products Testing Laboratory, National Institute of Standardization and Metrology
Alexandru Tarlajanu, General Director, Food Products Testing Laboratory, National Institute of Standardization and Metrology
Eugenia Spoiala, Director, Center for Accreditation and Product Conformity Assessment

Nicolae Soia, Director, Main State Phytosanitary Quarantine Inspectorate
Ala Panzaru, Deputy Director, Main State Phytosanitary Quarantine Inspectorate
Nicolai Railean, Director, Central Scientific-Diagnostic Quarantine Reference Laboratory, Main State Phytosanitary Quarantine Inspectorate

Dumitru Brinzila, Head of European Integration, Ministry of Economy and Trade
Ruslan Codreanu, Deputy Head, Division of Economic Adjustments in the European Integration Process, Ministry of Economy and Trade
Octavian Calmac, Director, Directorate General Trade Regimes, Ministry of Economy and Trade

* Some of the people on this list were interviewed during the World Bank team's September 2005 mission to Moldova; others were participants in the Stakeholder Consultation in Chisinau, December 9, 2005, and in the Moldova Agriculture Policy Workshop, June 2006. All graciously provided information and suggestions for this *Action Plan*.

Roman Vengher, Doctor-chief, Sanitary-Veterinary Expertise Laboratory, Central Open Market, Chisinau
Radu Mudreac, Municipal Doctor-chief, Municipal Veterinary Diagnosis Clinic Laboratory, Chisinau

Eduard Andreev, Veterinarian, Border Veterinary and Quarantine Services
Elena Sovirlea, Head, Border Quarantine Services
Liubovi Antoninciuc, Head, Plant Protection Inspectorate, Hancesti
Nicolai Antoninciuc, Head, Town Phytosanitary Quarantine Station, Hancesti

Constantin Tighineanu, Head, Preventive Medicine Center, Orhei r-n
Constantin Godonoaga, Head of Chemical Laboratory, Preventive Medicine Center, Orhei r-n
Natalia Denisova, Head of Bacteriological Laboratory, Preventive Medicine Center, Orhei r-n
Dragos Cornea, Head, Veterinary Inspectorate, Orhei r-n
Natalia Sarghi, Head, Sanitary and Veterinary Laboratory, Orhei r-n
Grigore Matenco and Gheorghe Botnariuc, Veterinarians, Sanitary and Veterinary Laboratory, Orhei r-n

Ion Cazacu, Head, Veterinary Inspectorate, Falesti r-n
Mihai Blandescu, Head, Town Phytosanitary Quarantine Station, Falesti
Nicolae Talmaci, Head, Preventive Medicine Center, Falesti

Private sector
Ion Muntean, Carmez S.A., meat-processing company
Sergiu Croitoru, General Manager, SGS Moldova
Teodor Ghieshu, Manager, Consumer and Agricultural Services, SGS Moldova
Jitariuc Rodica, Veterinarian, Avicola Vadul lui Voda (poultry-breeding enterprises)
Oleg Istrati, Executive Director, Avicola Vadul lui Voda
Olga Sandu, Deputy Director and Veterinarian, Avicola Vadul lui Voda
Olga Godonoaga, Head of Laboratory, ORHEIVIT Juice Processing Company
Elena Cumpana, SMQ ISO and HACCP coordinator, ORHEIVIT Juice Processing Company
Anatol Cislaru, President, Carmez Meat Factory
Gh. Ciobanu, ALBA (Joint Moldovan-American Holding of Dairy Companies)
Igor Boxan, Raw Material Department Director, ALBA
Silvia Scobioala, General Director, Free Fisheries (fish-processing company)
Sergiu Bolocan, Financial Director, Free Fisheries
Cires Vasile, private farmer, “Logofat – Prim” Ltd.
Sergiu Iuncu, Manager, “Verde Mondial” S.A

Industry and consumer organizations
Alexandr Marcenco, Executive Director, Moldovan Center for Food Safety and Quality
Igor Vatamaniuc, Vice President, Republican Union of Agricultural Producers Associations, “Uniagroprotect”
Zvezdin Alexei, Marketing Consultant, “Uniagroprotect”
Vera Monul, Deputy Director, Patronage Union of Exporters and Importers of Grain and Agricultural Production of Moldova “Agrocer”
Starus Denis, President, Consumers’ Protection Center
Craciun Nicolai, Consumers’ Protection Center

Donor agencies and projects; international organizations

David J. Sedik, Chief, Policy Assistance Branch, Regional Office for Europe, FAO
Galina Lyashenko, CAMIB, PFID Project coordinator, USAID
Eugen Osmochescu, member of the State Commission for Private Business Activities Settlement, BIZPRO
Roman Ladush, USAID/BIZPRO, Regulatory Reform working group member
Denis Gallagher, USAID/BIZPRO
Mariana Botezatu, Manager, BIZPRO Moldova
Larisa Bugaian, Manager, BIZPRO Moldova
John C. Starnes, Country Program Officer, USAID Moldova
Sergiu Botezatu, Project Management Specialist, USAID
Val Chodsky, Land Privatization Support Project, USAID
Beau Crowder, IPHO/USPA
JaclineBoardman, Agribusiness Advisor, CNFA
Bivol Vitalie, Agriculture Quality Specialist, CNFA
Anatoly Terzi, Director, Agribusiness Enterprise Support, CNFA
Vasile Munteanu, Program Director, PFCP/GWRP, CNFA
Speranta Olaru, Policy Advisor, EC Food Security Program
Ion Bularga, EC Food Security Program
Mark Le Selleur, EC Food Security Program
Daniel Ivarsson, Chief, Office for Arab States, Europe, and the CIS, International Trade Center
Gunnar Olvik, Program Officer, SIDA, Embassy of Sweden in Moldova

Other

Sinciuc Lilia, Executive Director, Euromol Management and Consulting
Luc Engelen, General Manager, GL Moldova
Grigore Darie, Director General, National Institute of Livestock Production and Veterinary Medicine

Appendix 10 Glossary

accreditation, laboratory *also*, accreditation bodies	Formal recognition that a laboratory is competent to perform specified tests or measurements. An accreditation body is an organization that performs accreditation services (UNIDO).
Acquis Communautaire (EU)	The entire body of laws, policies, and practices that have evolved up to the present in the European Union. This includes all the treaties, regulations, and directives passed by the European Union and affiliates institutions. The expression made its first official appearance in the 1992 Maastricht Treaty, under which it became an explicit objective of the Union "to maintain the *acquis communautaire* and build on it."
agricultural health	Animal health and plant health; *see* **animal health** and **plant health**.
agrochemical	A synthetic chemical used in agriculture, such as a fungicide, pesticide, insecticide, chemical fertilizer, herbicide, feed additive, fumigant, plant hormone, steroid, or antibiotic.
animal health	Issues pertaining to diseases of fish, bees, and livestock and the prevention thereof.
border post	A port, airport, railway station or road checkpoint open to international trade of commodities and at which veterinary or plant inspections may be performed (OIE).
calibration, traceable	Calibration consists of comparing the output of the process or instrument being calibrated against the output of a standard instrument of known accuracy when the same input (measured quantity) is applied to both instruments. Traceable calibration is a mandatory requirement in meeting standards such as ISO 9000, and requires documentation that shows that the process instruments are calibrated by standard instruments linked by a chain of increasing accuracy back to national reference standards.
conformity assessment	A comprehensive process that includes testing, calibration, inspection, and certification to determine whether products, processes, systems, and people meet specified requirements (UNIDO).
disinfestation	Application of procedures to eliminate arthropods that may cause disease or are potential sources of infectious agents of animal disease or zoonoses (OIE).
epidemiology	Study of the causes, distribution, and control of disease in populations.
equivalence	Condition in which the sanitary and phytosanitary measures of one country, though not identical to those of another country, have the same effect or achieve the same level of sanitary or phytosanitary protection (WTO).
GAP, Good Agricultural Practice	GAP refers to the application of recommendations and available knowledge to addressing environmental, economic, and social sustainability for on-farm production and post-production processes resulting in safe and healthy food and nonfood agricultural products (FAO).

GOST	[*gosudarstvennyy standart*] The system of technical standards maintained by the Euro-Asian Council for Standardization, Metrology, and Certification (EASC), a regional standards organization operating under the auspices of the Commonwealth of Independent States (CIS).
HACCP, Hazard Analysis and Critical Control Point	A widely accepted food safety management system that favors monitoring critical points in food chains to prevent food safety problems by identifying specific hazards and measures for their mitigation (FAO Food Quality and Safety Systems Manual, 1998).
harmonization (of standards)	The establishment, recognition, and application by different countries of sanitary and phytosanitary measures based on common or uniform standards.
ISO, International Organization for Standardization	ISO is a nongovernmental organization consisting of a network of the national standards institutes of different countries that seeks to achieve a consensus among these countries on specifications and criteria to be applied consistently in the classification of materials, in the manufacture and supply of products, in testing and analysis, in terminology, and in the provision of services. ISO 9000 provides a framework for quality management throughout the processes of producing and delivering products and services. In June 1997, Codex recommended that laboratories responsible for control of export and import foods comply with ISO/IEC Standard 17025 "General Requirements for the Competence of Calibration and Testing Laboratories" (ISO).
ISPM, International Standards for Phytosanitary Measures	Standards, guidelines and recommendations adopted by contracting parties to the IPPC (and selected other FAO members) as the basis for phytosanitary measures. [Note, however, that the same acronym is more commonly used for Invasive Species and Pest Management.]
maximum residue level (MRL)	The maximum concentration of a pesticide, veterinary drug, or other chemical substance residue (expressed as mg/kg), recommended by the Codex Alimentarius Commission to be legally permitted in or on food commodities and animal feed. Food derived from commodities that comply with the respective MRLs are intended to be toxicologically acceptable and safe for human consumption (FAO). Food regulators can use MRLs different from those recommended by Codex Alimentarius or can choose their own MRLs for substances and food products for which no Codex Alimentarius advice has been formulated.
monitoring	Continuous investigation of an infected population or subpopulation and its environment to detect changes in the prevalence or incidence of a disease, often to chart progress of a disease control program in assessing its effectiveness (OIE, FAO EMPRES). *See also* **surveillance**
morbidity rate	Incidence or prevalence of disease (FAO EMPRES).
mortality rate	Proportion of death in a population (FAO EMPRES).

mutual recognition arrangements	Mechanisms by which a user or acceptance authority in one country can have sufficient confidence in the validity of test reports and calibration certificates from laboratories in foreign countries without having to make individual evaluations of the competence of those laboratories (UNIDO).
nondiscrimination in trade	Circumstance in which a country treats its trading partners equally (giving them equally "most-favored-nation" or MFN status). Some exceptions are free-trade areas in which special arrangements apply to goods traded among countries within the "free-trade area." Also, imported and locally-produced goods are treated equally, at least after the foreign goods have entered the market. This treatment of foreign and domestic goods, services, trademarks, copyrights, and patents is known as "national treatment": giving others the same treatment as one's own nationals receive (WTO).
notifiable disease	A disease listed by law that must be reported to veterinary authorities as soon as it is detected or suspected (OIE).
OIE listed diseases	Transmissible diseases, as agreed by the OIE International Committee (Chapter 2.1.1 of the Terrestrial Animal Health Code 2005). In May 2004, OIE member countries approved the creation of a single list of diseases notifiable to the OIE. A new list was approved in May 2005 by the International Committee and became effective in 2006. [N*ote that before 2006 diseases notifiable to the OIE were classified in two lists, List A and List B.*] (OIE)
outbreak	Occurrence of disease in an identifiable group of animals (for example, animals in a pen or animals within a village) at a level greater than that normally expected (FAO EMPRES).
pest	Any biotic agent capable of causing injury to plants or animals or to plant and animal products.
pest list	[also referred to as *regulated pests list*] Either or both of a list of quarantine pests associated with plant products not present in the importing country and/or of pests of quarantine importance associated with the product found only in parts of the importing country and subject to official control. These lists are required under the International Plant Protection Convention (IPPC) and are intended to help in safeguarding activities, including preclearance inspection at ports of entry, exotic pest surveys, and eradication activities. *See also* **quarantine pest**, **regulated nonquarantine pest**, **regulated pest**
pesticide residue	Any specified substance in food, agricultural commodities, environment or animal feed resulting from the use of a pesticide. The term includes any derivatives of a pesticide that are considered to be of toxicological significance. (FAO)
phytosanitary	Pertaining to plant quarantine (FAO).
phytosanitary certificate *also* phytosanitary certification	A phytosanitary certificate is an official document attesting to the phytosanitary status of any consignment affected by phytosanitary regulations (FAO).

phytosanitary legislation	Basic laws granting legal authority to the relevant ministry or agencies to draft phytosanitary regulations (FAO).
phytosanitary measure	Any legislation, regulation, or official procedure having the purpose of preventing the introduction and/or spread of quarantine pests (FAO).
plant health	Issues pertaining to pests and diseases affecting plants and the prevention thereof.
plant quarantine	All activities designed to prevent the introduction and/or spread of quarantine pests or to ensure their official control (FAO).
quarantine	For plants, official confinement of plants or plant products subject to phytosanitary regulations for observation and research or for further inspection, testing, and/or treatment (FAO). For animals, isolating a group of animals in such a way that it precludes contact with other animals and prevents spread of disease. During quarantine an animal may undergo observation for a specified length of time and, if appropriate, testing and treatment (OIE).
quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there or present but not widely distributed and being officially controlled (FAO).
regulated nonquarantine pest	A nonquarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party (IPPC, 1997).
regulated pest	A quarantine pest or a regulated nonquarantine pest (IPPC, 1997).
risk	Likelihood of the occurrence and likely magnitude of the consequences of an adverse event to human, plant, or animal health as a result of a hazard (OIE).
risk analysis	Process composed of hazard identification, risk assessment, risk management, and risk communication (FAO). ***Risk assessment*** is the evaluation of the likelihood and the biological and economic consequences of the entry, establishment, or spread of a pathogenic agent within the territory of an importing country. ***Risk management*** is the process of weighing policy alternatives in the light of the results of the risk assessment and, if required, selecting and implementing appropriate control options, including regulatory measures. ***Risk communication*** is the interactive exchange of information on risk among risk assessors, risk managers, and other interested parties. In plant health, a Pest Risk Analysis (PRA) consists of pest risk assessment and pest risk management. Pest risk assessment is the determination of whether a pest is a quarantine pest and evaluation of the potential effects of its introduction. Pest risk management is the decision-making process of reducing the risk of introduction of a quarantine pest (FAO).
sanitary and phytosanitary (SPS) measures	Any measure applied to protect human, animal, and plant health or life from risk arising from the entry, establishment, or spread of a hazard (OIE).

science-based	Based on scientific justification or as a consequence of consistent risk decisions based on an appropriate risk assessment (WTO).
stamping out	Method of eradicating disease by killing all animals infected with and/or exposed to pathogens in a herd or defined region (OIE).
surveillance *also* active surveillance, passive surveillance	Observation and investigation of a susceptible (uninfected) population or subpopulation aimed at the early detection of cases of a particular disease so that control action can be quickly instituted (OIE, FAO EMPRES). Surveillance is often subdivided into two categories, passive and active. Passive surveillance is the secondary use of routinely collected data generated for some other purpose, such as diagnostic service. Active surveillance is the routine collection of data whose primary purpose is for surveillance (FAO EMPRES). S*ee also* **monitoring.**
traceability	Ability to follow the movement of a food through specified stage(s) in the production, processing, and distribution chain (Codex Alimentarius Commission).
transboundary animal diseases	Diseases of significant economic, trade, and/or food security importance for a considerable number of countries; that can easily spread to other countries and reach epidemic proportions; and the control and/or management, including exclusion, of which requires cooperation between several countries (FAO EMPRES).
transit, transit corridor	Country or area through which commodities destined for an importing country are transported or in which a stopover is made at a border post (OIE).
transparency	The principle of making available, at the international level, information on sanitary and phytosanitary measures and their rationale (OIE, FAO).
zoonosis	Disease or infection naturally transmissible from animals to humans (OIE).

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EU	European Commission Justice and Home Affairs. Glossary. http://ec.europa.eu/justice_home/glossary/glossary_a_en.htm.
FAO	Glossary of phytosanitary items. http://www.fao.org/docrep/W3587E/w3587e01.htm.
FAO EMPRES	Emergency Prevention System (EMPRES) for Transboundary Animals and Plant Pests Diseases. http://www.fao.org/livestock/AGAH/EMPRES/GEMP/resources/resources.html.
OIE	Terrestrial Animal Health Code (2005). General definitions. http://www.oie.int/eng/normes/mcode/en_chapitre_1.1.1.htm.
UNIDO	Working Paper No. 2 in Trade Capacity Building Series. 2003. "Laboratory Accreditation in Developing Economies."
WB	Food Safety and Agricultural Health Standards: Challenges and Opportunities for Developing Country Exports. 2005. Report No. 31207. World Bank.
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