

**Partnerships for Food Industry Development  
A U.S./Ukrainian/Moldovan Partnership**

**Leader-with-Associates Agreement No: PCE-A-00-01-00012-00  
Funded by  
The United States Agency for International Development  
USAID M/FM/CMP  
1300 Pennsylvania Avenue, N.W.  
Washington, DC 20523-7700**

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**Solution Strategy Paper/Capacity  
Building Document**

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**February 2002**

**Submitted by  
International Programs  
Louisiana State University Agricultural Center  
Baton Rouge, Louisiana**

**In association with  
The World Food Logistics Organization,  
The World Laboratory, Ukraine Branch, and  
The National Institute of Animal Husbandry and Veterinary Medicine of Moldova**

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## List of Acronyms and Abbreviations

ACDI.....	Agricultural Cooperative Development International
ACM .....	Advisory Committee Meeting
CIS .....	Commonwealth of Independent States
CNFA.....	Citizen’s Network for Foreign Affairs
EU .....	European Union
FNFM.....	National Federation of Farmers in Moldova
FSIS.....	Food Safety Inspection Service
HACCP .....	Hazard Analysis Critical Control Point
IAR.....	Initial Assessment Report
IARW .....	International Association of Refrigerated Warehouses
INZVM .....	National Institute of Animal Husbandry and Veterinary Medicine
LSU AgCenter .....	Louisiana State University Agricultural Center
NGP.....	Nominal Group Process
OSAR.....	Odessa State Academy of Refrigeration
PFID .....	Partnerships for Food Industry Development
SCP .....	Sanitation Control Practices
TACIS .....	Technical Assistance to the Commonwealth of Independent States
“Ukrmiasso” .....	Ukrainian Meat Producers Association
“Ukrptakhoprom” .....	Ukrainian Poultry Producers Association
USAID .....	United States Agency for International Development
USDA.....	United States Department of Agriculture
VAT .....	Value-Added Tax
“Vinnitsa Project” .....	Support for Ukrainian Private Farming Sector and Scientific Collaboration
VOCA .....	Volunteers in Overseas Cooperative Assistance
WFLO .....	World Food Logistics Organization
World Lab .....	World Laboratory, Ukraine Branch
WTO .....	World Trade Organization

## **Section I. Introduction and Summary**

This document summarizes the recommended solution strategy and capacity building activities to be undertaken by the Partnerships for Food Industry Development (PFID) Project in order to address the key issues facing the meat, poultry and seafood processing industries in Ukraine and Moldova. In doing so, it addresses the Project's last three of five objectives:

3. Formulate support mechanisms and networks;
4. Create technical and educational capacity among key institutions in the industry; and
5. Foster business partnerships.

### **Executive Summary**

The recommended activities in this document are based on the Project's assessment activities, as documented in the 2001 Assessment Report. Solution Strategy activities were further refined at the Project's Advisory Committee Meeting (ACM). Due to the Project's limited resources, each recommended activity is assigned a category: "A" activities – which can be conducted with the Project's own resources, "B" activities – which will require additional donor grants or awards, and "C" activities which will require business partnerships. Other strategy issues include the need to adapt individual activities for specific locales and sectors, as well as the Project's role as a catalyst and facilitator for the food industry.

The solution strategy activities recommended in this document are presented below – first grouped by category, then by objective.

#### *"A Category" Activities:*

- *Support mechanisms* - information management, industry association development, International Food Safety Center and networks and linkages for improving supply of raw material;
- *Training* – including HACCP and sanitation workshops, economic training seminars, WFLO-sponsored cold chain management training, exchange trips and association training;
- *Training, informational support and initial case studies* – on such topics as post-harvest technology and practices, as well as economic issues

#### *"B Category" Activities*

- *Support mechanisms* – to identify and promote products with market potential, increase raw material for the fish processing industry and develop of university departments in food science; and
- *In-depth, collaborative research* – on post-harvest technology and practices, economic issues; animal husbandry development and recovery of poultry supply.

### *“C Category” Activities*

- The Project will provide or create conditions that facilitate business partnerships through case studies, networking and promotion
- *Proposed partnerships* – include Linkages with other USAID-funded projects, increased cost-effectiveness of the fish industry in the Southern Region, re-establishment of current assets, a rural-based pilot-project, and production of canned poultry meat or endocrine-enzymes.

### **Background**

The Louisiana State University Agricultural Center (LSU AgCenter), World Food Logistics Organization (WFLO), the World Laboratory, Ukraine Branch (World Lab), in Kyiv, Ukraine, and the National Institute of Animal Husbandry and Veterinary Medicine, Chisinau, Moldova (INZVM) are partners in the USAID-funded Partnerships for Food Industry Development (PFID) Program. The program presented was anchored on the following themes: 1) industry awareness; 2) support mechanisms; 3) post-harvest and processing technologies; 4) capacity building; and 5) business partnerships. It was designed to focus on meat, poultry and seafood processing – initially in Ukraine and Moldova.

The justifications for the recommended activities in this document are the results of the Project’s assessment activities, as documented in the 2001 Assessment Report. The major sources of information for the assessment report are:

1. The review of key items from the Initial Assessment Report (IAR; detailed in a separate report), conducted by the PFID Technical Team on May and June 2001;
2. The findings from the Client Profile - a survey of meat, poultry and seafood processors – which was conducted by World Lab and INZVM from August to October 2001;
3. Results of the Nominal Group Process (NGP) conducted at Project Stakeholders Meetings in Ukraine and Moldova during October and November 2001 (three break-out groups – representing processors of meat, poultry and seafood – were convened in each country and provided a list of priority issues to be addressed); and
4. Additional sources, including literature from the Ukrainian Academy of Agrarian Sciences and a refrigeration survey.

Solution Strategy activities were further refined at the Project’s Advisory Committee Meeting (ACM) held in Mid January 2002. Committee members included the following:

- *Technical Team members from the LSU AgCenter* - Dr. Michael Moody (Chairman of the Food Science Department), Dr. Kenneth McMillin (Professor of the Animal Science Department) and Dr. R. Wesley Harrison (Associate Professor of the Agricultural Economics Department);
- *Management Team from the LSU AgCenter* – Dr. Lakshman Velupillai (Director, International Programs) and Dr. Jonathan Hubchen (PFID Project Coordinator);

- *Technical Team members from WFLO* – Mr. J. William Hudson (President) and Mr. R. Brinkley Seward (Director of Membership);
- *Representatives from Ukraine* – Dr. Gennady Palshin (Director General of World Lab), Dr. Hennadii Mironiuk, (First Deputy Chairman of the State Committee of Standards) and Mr. Vladimir Popov (President of the Ukrainian Meat Producers Association or “Ukrmiasso”);
- *Representatives from Moldova* – Dr. Ion Socican (Project Director from INZVM), Dr. Sergiu Chilimar (Professor at INZVM) and Mr. Petru Brijatâi (Technical Director of Carmez Meat Processing Company); as well as
- *Representatives of USAID’s Global Bureau* (Mr. James Dunn and Dr. Ivor Knight) and of the Chancellor of the LSU AgCenter (Dr. William Brown).

A key issue in the selection and development of these activities is the recognition that the project has limited resources with which to promote the development of the food industry in Ukraine and Moldova. Therefore, the Project will assign each activity mentioned in this document to a category. These categories are listed as follows:

- “*A Category*” - Very important though low-cost, short-to-medium solutions, which could be implemented without outside funding;
- “*B Category*” - Medium-term solutions or strategies requiring additional donor grants or awards; and
- “*C Category*” – High-priority, long-term solutions, which would require business partnerships and private investors; and

These categories correspond to the order in which the Project would schedule its activities. It is assumed that USAID would naturally prefer PFID to devote its attention to activities that can be conducted with existing resources before asking for additional funding. Proposals detailing “*B Category*” activities will be prepared and submitted when the Project has a proven record in providing tangible results for its clientele. In spite of being listed third, the Project will place a high priority on the promotion of “*C Category*” activities because fostering business partnerships is explicitly mentioned as a Project objective. These activities will be specifically described in Section IV of this paper. Another issue is the realization that a single solution strategy will not be appropriate for the entire food industry in both countries. Sets of solution or capacity-building activities will be targeted to specific regions and sectors based on the comparative needs and constraints of those parts of the industry. Assessment results can be used as criteria to determine those needs and constraints. An example would be a comparison in the gap between productive capacity and actual production that exists in the various regions in Ukraine and Moldova.

Lastly, consideration should be given regarding the Project’s role within the food industry in Ukraine and Moldova. Project activities should provide clientele with exposure to improved practices in meat, poultry and seafood processing – then help develop the institutional infrastructure necessary for such practices. In doing so, the Project should serve as a catalyst and facilitator for its clientele. Project activities also would be useful as models showing what works

and what does not in the industry. Emphasis will be placed on models with a business, rather than academic viewpoint and WFLO's participation in the Project should ensure this.

## **Section II. Objective Three - Formulate Support Mechanisms and Networks**

The support mechanisms that are to be promoted under one of the Project's objectives were originally divided into two types: partnerships between two entities or groups, and associations of similar enterprises. In fact, the participants at the ACM determined that associations were usually the most appropriate vehicles for the activities mentioned.

### **“A Category” Activities**

#### *1. Information Management*

PFID could build on the information system developed by World Lab in the Support for Ukrainian Private Farming Sector and Scientific Collaboration Project (the “Vinnitsa Project”), as mentioned in the IAR. Topics for dissemination could include the following:

- *New technologies, equipment and standards* – for example WFLO's information on best cold chain practices is being translated into Ukrainian and Moldovan while other manuals on commodity storage, maintenance, modernization and energy conservation also have been provided to World Lab and INZVM;
- *Domestic and international marketing possibilities* (price and new products), similar to what is provided by the USDA Economic Resource Service – such a service, could be linked to similar work in the Vinnitsa Project and might lead to telemarketing services;
- *Relevant legislation and regulations* – including taxation, packaging, clearance of imported raw materials, etc.
- *Location of raw material sources*; and
- *A WFLO-provided industry directory* – useful for developing networks.

This information could be disseminated through information bulletins developed under the umbrella of PFID.

Both the Ukraine Seafood NGP and Mr. Boris Gudyma, a senior official of the Department of Fish Industry of Ukraine, identified the development of an Internet-based information system of fish processing to be a priority issue. At the ACM, developing and maintaining web pages was also seen as a useful component of any information system. Such a system would require a server and computer. The web page would contain information on the three sectors: poultry, meat and seafood. In Ukraine, three associations responsible for each sector – “Ukrmiasso”, the Ukrainian Poultry Producers Association (“Ukrptakhoprom”) and the Association of Fish Producers – have agreed to take responsibility to submit initial information. For each topic for dissemination (such as those listed above), a data structure would be designed to reflect current situations and help in decision-making. It is anticipated that, in a year to a year and a half, the system would be self-supporting from contributions from association members.



However, the lack of computer equipment and Internet access in rural areas might limit the value of such an endeavor. If the Project wishes to implement such a system, it should assess how the Vinnitsa project overcame this constraint. Regardless of the medium, the system will be closely linked with affiliated associations, as will be described later.

## 2. *Association Development*

Both countries have demonstrated a great need for associations that are able to coordinate the activity of processing companies, to offer consulting assistance and to contribute to product marketing. WFLO is willing to develop a working relationship with any food processing enterprise that participates in this project. Such a relationship can include affiliation of any national industry associations with WFLO's sister organization, the International Association of Refrigerated Warehousemen (IARW). This will provide those participants with access to WFLO's reference information and collaboration with members of affiliated organizations. In addition, this document will later mention the potential of partnering with existing projects. Linkages with such projects promoting association development would be particularly useful.

*Organizational Establishment* – In some cases, it will be appropriate to promote the revitalization and development of existing associations in the industry. Some stakeholders claimed the Association of Meat Producers of Ukraine to be the only body that is effective, fast acting and capable to protect and advance its constituents' interest in an organized way. Others spoke well of the Ukrainian Producers Poultry Association. However, many participants in the stakeholders meeting stated that processor associations still are not strong enough to provide strong support to their members. Many enterprises, especially large operations, do not feel they would have any advantage from membership. Some associations that suffer have a reputation of current or previous government affiliation, which might be an obstacle to increasing membership of private companies. However, it is felt that working with existing associations whenever possible will be preferable to creating new institutional layers.

That being said, the need to establish new associations for industry stakeholders also has been identified as a critical issue in many sectors. The Moldova Seafood NGP stated that the establishment of a fish industry federation is necessary to create an integrated system of fish branch management, coordination and organization to unify manufacturers, processors of fish products and trading enterprises. The Ukraine Seafood NGP favored the foundation of an association of fish processors to unite fish-catching, fish processing and trade enterprises. The Moldova Poultry NGP identified the need to create a poultry association that would facilitate: the export of poultry products, poultry processing, receiving of international credits and investments and standardize meat processing technology to export poultry products. Moldova Meat NGP recognized the lack of an association of animal and fodder producers and meat processors as a major constraint to their industry.

Unfortunately, the legal environment is not favorable for association activities. Not only does Ukrainian legislation not allow associations to be registered as a group of legal entities, but also the procedure of registration itself is not easy. While such legislative reform might be beyond the Project's capability, WFLO has the educational resources to increase a processor association's ability to demonstratively address its member's needs.

The Director of the Odessa State Academy for Refrigeration (OSAR) suggested that the organizational development of a Seafood Association could be linked establishment of a “techno-park” in the Southern Ukrainian region. The Institute of Cattle Breeding from the Ukrainian Academy of Agrarian Sciences recommended this form of tax relief for all entities engaged in producing, processing and sales of products. “Techno-parks” were areas in which the main goal would include: the implementation of investment and operational innovation activities; introducing research findings and new technologies into manufacturing practices; and developing globally competitive products. The Value-Added Tax (VAT) amount, which is calculated according to the amount of goods and services produced in the parks, would be diverted to special accounts and used solely for research and development activities and development of scientific, technological, research and testing facilities of interest to the entities in the park.

INZVM suggested a five-stage process to establish a fish association:

1. Inform the Ministry of Agriculture and Food Processing Industry about the most critical issues and needs that were identified at the stakeholders meeting;
2. Prepare the justification for such an association;
3. Assemble representatives of fish producers, processors and trading organizations to discuss the issue;
4. Prepare all institutional documents; and
5. Assemble the founders of this association.

*Organizational Development* – In addition to establishing industry associations, WFLO proposes to improve those associations’ capacity to conduct basic services for their members. These services typically fall into one of three categories, which are described below.

- *Information exchange/education* - An association can facilitate the exchange of information between member so they can make appropriate operation decisions. Promoting such an exchange also could address WFLO’s observed lack of an information system, which is cited earlier in this document. One measure taken under this category could be the design of associations’ web pages. Associations also can provide capacity building activities for their members and would be invaluable in providing their members with access to PFID-designed training seminars, and collaborative research on slaughtering, refrigeration and processing technologies.
- *Marketing* – Likewise, an association can serve as a vehicle or catalyst for any PFID-designed marketing strategy for the industry. An American-Ukrainian Food Center was proposed at the ACM to promote such marketing possibilities, as well as promoting joint business ventures (to be described in Section IV).
- *Industry Promotion* - Many of the NGPs at the stakeholders’ meetings identified critical issues related to policy or legislative reform for competition, credit and other issues. By itself, the Project does not have the capability to address these issues. However, it could develop the capacity of Sectoral associations to promote the industry’s interests in relation to such reforms, if those associations feel that such advocacy is necessary. These

endeavors could improve industry stakeholders' abilities to unify themselves, to establish relations with policy makers and to establish associations that visibly respond to the industry's needs.

The Project's promotion of networking between associations across components and countries could further facilitate these three services.

### 3. *International Food Safety Center*

World Lab and the State Committee for Standards have jointly concluded that the creation of an affiliation with WFLO/IARW could be established to address the standard and safety control issue in the Ukrainian Food Industry. Such an affiliation could be established in cooperation with the Institute of Quality at the State Committee for Standards and the Department of Veterinary Medicine and Food Safety at the National Agrarian University of Ukraine, as well as with PFID. The resulting institution could be called the International Training and Methodological Center of Food Safety. This said Center could be eventually registered as an entity officially designated for HACCP certification of industrial enterprises.

However, what World Lab and the government agencies are proposing is significantly different from the overseas affiliations that WFLO traditionally helps organize. Both WFLO and the Project in general will have to decide whether such a departure is possible given the available resources. It might be more practical to base such a Center on framework used by the HACCP Alliance, on university partnerships or on the Codex Alimentarius Commission (INZVM favors collaboration with the latter). Whichever organizational framework is used, the establishment of such a center will require training of certified specialists, assistance with laboratory establishment, manuals and curricula. The Center could undertake the following activities:

- Seminars, internships, conferences and other activities promoting awareness and exchange of experience on HACCP issues in Ukraine - as well as other topics deemed important in the areas of safety, sanitation and standards;
- Assistance in development of regulatory base (mentioned below);
- Promotion of HACCP to both processors and regulatory agencies;
- Organization of competitions for producers of highest quality foods;
- Provision of information and consulting support to the newly established Institute of Quality in the sphere of educational technologies, including extension programs; and
- Establishment of an independent and internationally accredited food safety laboratory (this would require additional funds, as mentioned in a later proposal for university departments in Food Science on page 14).

In addition, the Institute of Quality could act as a back-up organization that would conduct day-to-day work.

Such a center could promote the simplification of the regulatory process. The Ukraine Meat NGP favored merging all quality control agencies into one body. In Ukraine, the State Committee for Standards, veterinary medicine authorities, Sanitary and Epidemiological Service

are all involved in regulating the food industry. Unfortunately, their regulations often are not consistent and often interfere with production activities. Seafood NGP results involved simplified veterinary control of raw materials by decreasing the number of controlled indices and issuing certificates for catching areas. INZVM stated that the current situation in Moldova necessitates the creation of a single, independent regulatory body responsible for raw material and final product quality control, based on the work of existing control institutions.

Dr. Mironiuk of the Ukrainian State Committee of Standards stated that his committee would facilitate harmonization with European standards and regulations in the next 7 years. This will include compliance with 5000 international standards and 100 EU directives. Such harmonization also would facilitate Ukraine's entry into the WTO (Moldova already is a member). A center might facilitate such harmonization as well as quality management training. The Center could promote companies that follow quality management practices through certification.

#### 4. *Networks and Linkages for Improving Supply of Raw Material*

Many stakeholders and project staff identified the lack of raw material resources as the industry's most critical problem. Nina Cainarean, INZVM's economist, stated that the Project should encourage processors to support *local* producers of raw material. For example the National Federation of Farmers in Moldova (FNFM – Romanian acronym) could promote the unification of feed suppliers, livestock producers and processors in an Association.

It should be noted that “B Category” activities also were designed to address the raw material issue are described in two separate parts of this document. When the networks and linkages mentioned in this sub-section show outcomes favorable to the clientele, proposals for “B Category” activities will be designed. These include support mechanisms relating to fish and seafood re-organization, which are mentioned later in this section, as well as animal husbandry programs designed to improve Ukraine and Moldova's technical capacity to provide raw materials. The latter “B” activities are listed in on Page 18.

Improving the raw material supply in all three sectors can be accomplished through organizationally linking processors with raw material and fodder producers and facilitate credits for raw material producers. Dr. Ion Socican, of INZVM, has promoted such facilitation by linking a poultry producer and processor with a CNFA-funded grant application for \$500,000 (approval is not yet know at this point). Project staff can make similar contributions to clientele by identifying available credit and grant sources and assisting in the application process. The Project can concentrate upon smaller processors in the future. Integration can have other benefits in terms of credit access. By themselves, fish and livestock producers are often disallowed from claiming assets as collateral. However, through linkages with processors, they might be able to avail of any favorable credit schemes available to the processors. By the same token, integration might allow processors to be eligible for VAT exemption.

The Moldova Poultry NGP noted a lack of integration between raw material producers and processing. Dr. Harrison said that developed poultry sectors typically exhibit vertical integration between producers and processors.

The integration between beef producers and suppliers, on the other hand, would best be served by a central livestock market. This could facilitate the assembly, grading (by age and size), and sale of animals. Central markets create a forum for orderly and direct exchange between livestock producers and processors, regulated by a set of equal rules and standards. The existence of centralized markets would provide alternative markets for livestock producers, thus leading to improved price competition. Wholesale livestock markets also could support an independent marketing service and transparency of operations.

According to the Ministry of Agrarian Policy, there are 112 livestock auctions registered in Ukraine. In Ukraine last year, twenty-four livestock auctions took place at the Oblast level and 141 at the raion (district) level. However, these were mostly two-to-three day events, generally for the realization of pure-strain livestock. Organized permanently operating wholesale commercial livestock markets for procurement of meat processing enterprises actually do not exist in Ukraine. A potential area of collaboration between the PFID economists would be to study the degree of monopsonistic behavior in local markets, measure the welfare effects of such behavior, and determine ways to improve the efficiency of these markets. Recommendations might include a link with an association (FNFM has shown interest in Moldova) or partnership and the possibility of a contracted intermediary (possibly paid a commission).

Another possibility to improve market efficiency might involve forward contracts between processors and selected farmers. PFID could partner with the LSU-World Lab's on-going Vinnitsa Project to implement this solution strategy, as was originally suggested in the IAR. The Moldovan NGP reinforced this recommendation when it stated that fish processors are not able to organize the commercialization of their products. They advocated the establishment of large centralized warehouses for wholesale of fish products (in Chişinău, Balti and Bendery) where fish will be graded and stored. These centralized warehouses should be enabled with modern distribution facilities (pick and pack services and less-than-a-truckload programs for product transportation).

## **“B Category” Activities**

### *1. Identification and Promotion of Products with Market Potential*

Both the Ukraine Meat NGP and the Moldova Seafood NGP stressed the need to develop distribution markets. Due to the current economic situation the Ukraine Meat NGP stated that there are no significant marketing outlets in Ukraine. Participants also stated that the current potential for such outlets is limited to the home market and to some extent the CIS markets, particularly Russia.

A market analysis to investigate the mechanism of market formation for the main food products in Ukraine and Moldova should lead to an assessment of potential options and projected volumes of production of various types of meat and processed products in the country. Such a market infrastructure assessment should cover the effects of the shadow economy. Other issues would include processing, logistics, storage, transportation, standards and food safety/sanitation. The Ukrainian Academy of Agrarian Sciences made this recommendation specifically for the Kharkiv oblast but it could be applied elsewhere. For example, finished seafood products that were identified as having potential for export could be promoted in international seafood

expositions as recommended in the IAR. Dr. Moody, of the LSU AgCenter, has recommended that an associate grant proposal be prepared under the PFID umbrella for such evaluations in 2003-2004. He states that any identified products should be promoted in the Boston Seafood Show and the Tokyo Seafood Show (both in 2003). This and similar activities will show international markets what Ukraine and Moldova have to offer.

Mr. Gudyma, of the Ukrainian Fish Industry Department, felt that the Ukrainian seafood products that could be attractive for the western markets are chilled (live) crawfish, chilled (live, including pike-perch, flat-fish and pelengas) fish and various shellfish species - i.e. *rapana*, mussels, snails and others. He also recommended the establishment of an Information and Marketing Center of Trade Promotion in Ukraine to the list of recommended activities to familiarize Ukrainian producers with legislative and regulation demands importing countries.

Potential meat exports to the United States must follow a three-step process for approval as stated by Dr. McMillin:

1. The USDA's Food Safety Inspection Service (FSIS) must approve the country for export, based on the degree to which that countries standards and regulations are documented to be consistent with that of the United States;
2. The HACCP plan of the individual plant that is processing the goods intended for export must comply with FSIS regulations (FSIS will determine whether the HACCP plan prevents food-borne illness); and
3. Each lot of products must be inspected upon arrival in the U.S.

Dr. McMillin has promised to ask the FSIS whether they can initiate this process for Ukraine and Moldova; Dr. Moody will do the same for the Food and Drug Administration which has similar regulatory authority for seafood (which also is based on approval of HACCP plans). It is probable that the EU has a similar approval process. It might be that markets within the Eastern Europe region could be easier for Ukraine and Moldova to compete, given the demand of similar products.

It may be possible to achieve export diversification by developing niche markets for sausage and other processed meats in selected Western European countries (this was also suggested in the IAR). This would require compliance with HACCP regulations. Selected enterprises may also experience growth by improving their domestic niche marketing efforts (i.e., targeting upper income consumers). Exploration of either foreign or new domestic markets will require well-developed marketing plans, possibly leading to a test market launch, that arise from the case studies of potential markets. Other outcomes of such studies could include recommendations for business partnerships and capital investment. Such accomplishments could be facilitated by collaboration with Citizens Network for Foreign Affairs (CNFA) Agribusiness Partnership Program.

## 2. *Increasing the Quantity and Assortment of Raw Material for the Fish Processing Industry*

Both the Ukraine and the Moldovan Seafood NGPs identified this as critical issue. In Moldova during Soviet times, processing was reserved for marine fish while the fresh water variety was sold in local markets with a minimum of value-added processing. As the Soviet Union fell and

Moldovan fish processors lost their access to marine products, the market became glutted with unprocessed fresh-water fish. Therefore, stakeholders in the Moldovan seafood breakout group advocated re-organization of the fish processing industry, so that it would sell salty, smoked, preserved and canned fish using local raw material. Mr. Gudyma recommended the realization of the large potential for aquaculture. INZVM's Dr. Vasseli Lobchenco stated that, of the 20,000 hectares of potential fish water ponds surface in Moldova, only 8,000 are currently used. Increasing the utilization of such capacity would greatly benefit fish processors.

The Moldova Seafood NGP noted under-developed channels of fresh fish and fish products distribution and commercialization. The main fish sales markets are currently concentrated in Chisinau and other large cities of the Republic. Rural inhabitants do not have the opportunity to purchase fish and fish products in rural areas.

### 3. *Development of University Departments in Food Science*

Dr. Moody believes that the Ukrainian and Moldovan University systems could increase their role within their food industry of their respective countries. He proposes that this role would be better defined if key universities established food science departments. Dr. Socican of INZVM stated that Moldova lacks higher education training systems at with regard to processing and refrigeration technologies. In the past times, all personnel were trained at the universities in Moscow or other ex-Soviet cities.

Potential collaborating institutions would include the National University of Agrarian Science and Polytechnic University from Moldova. Measures that would promote the development of such departments would include TTT programs of faculty and internships or exchange programs with LSU AgCenter. Assistance with department establishment, manual acquisition and curriculum design also would be necessary and could be monitored by LSU Professors. A linkage with the International Food Safety Center (the establishment of which was mentioned earlier in this paper) also would be appropriate, particularly in the establishment of a certified laboratory.

### **Summary of Solution Activities Pertaining to Support Mechanisms**

Below is a summary list of the recommended support mechanisms, starting with the "A Category" activities to be instituted with the Project's existing resources. When these activities produce tangible outcomes in terms of client benefit, Project staff will consider preparing funding proposals for "B Category" activities.

#### *"A Category" Activities:*

- *Information management* – disseminated through web pages and brochures;
- *Association development* – establishment or revitalization and organizational development activities to increase an association's capacity to deliver services to its members (information exchange/education, marketing and industry promotion);
- *International Food Safety Center* – establishment of a Center that can sponsor educational activities, regulatory harmonization and promotion of HACCP; and

- *Networks and linkages for improving supply of raw material* – improvement of working relationships between livestock producers and meat processors.

*“B Category” Activities:*

- *Identification and promotion of products with market potential* – through market analysis, business plans, networking and participation in international expositions;
- *Increasing the quantity and assortment of raw material for the fish processing industry;* and
- *Development of university departments in food science* – to facilitate the academic role in the industry.

### **Section III. Objective Four - Create Technical and Educational Capacity among Key Institutions in the Industry**

Within this component, training activities, informational support and initial case studies, possibly leading to identification of collaborative research can be conducted within PFID’s resources and are “A Category” activities. However, in-depth, collaborative research activities will require additional funding and are therefore classified as “B Category” activities.

#### **“A Category” Activities - Capacity Building**

A shortage of qualified professional personnel and an imperfect training system within the production and processing field was a recurring theme from the NGPs in the stakeholder meetings. PFID-sponsored capacity building activities can perform a dual function; they can raise awareness and appreciation for improve practices and opportunities as well as provide the skills and knowledge necessary to realize those practices and opportunities. The PFID Technical Committee can provide assistance to processor associations and academic institutions. This could include capacity building activities such as “Train-the-Trainer (TTT) programs”, internships and cooperative development programs. As previously mentioned, WFLO is well placed to respond to informational and educational inquiries through its Scientific Advisory Council and the members of its affiliated organization, the IARW. It also has an extensive library of manuals on such specific commodity storage, energy efficiency and other cold chain issues.

##### *1. Meat, Poultry and Seafood HACCP and Sanitation Workshops*

In the seafood sector, Dr. Moody has proposed training workshops: one day for Sanitation Control Procedures (SCP) and three days for HACCP. An extra day will be provided for university lectures on the topics and to wrap up discussion. It is anticipated the training will begin on a Monday and end on Friday. All slides must be translated and a translator must be present. It is tentatively proposed that this one-week seminar be conducted in each of two locations: Odessa (during the last week of June 2002) and Chisinau (during the first week of July 2002). Certificates will be issued to all completing the course. Dr. Moody also recommends follow-up visits in October 2002 to seafood processing facilities to evaluate the SCP and HACCP plans of training participants and to monitor critical limits.



Dr. McMillin also is prepared to conduct HACCP training in the meat and poultry sectors. World Lab recommended a series of HACCP training activities, including TTT courses for HACCP, ideally under the auspices of the International Food Center (mentioned previously). Dr. Moody has replied that potential trainers must be certified in basic HACCP principles before they are eligible for TTT instruction.

## 2. *Economic Seminars*

These seminars were recommended to improve stakeholders' skills in marketing their product. Dr. R. Wesley Harrison, an agricultural economist on the LSU Technical Team, can coordinate, design and conduct of these courses during four two-week trips over the next three years. Possible topics include:

- US price, trade and consumption patterns;
- How efficient markets work, cash market mechanics and futures market principles;
- How to develop a marketing plan;
- The role of market research in developing marketing plans; and
- The role and function of trade associations in promoting exports.

## 3. *WFLO-Sponsored Training on Cold Chain Management*

The project could select key clientele to attend the WFLO Institute held annually at Norman Oklahoma. Course topics include:

- Industry perspective – the history, mission and positioning of professional refrigerated warehousemen;
- Food, safety and sanitation – including the benefits of refrigeration, sanitation auditing and food safety/HACCP;
- Human resources/supervision – including workplace management, leadership and professional development;
- Information technology – for inventory management and e-commerce;
- Others – logistics, finance & productivity and risk management.

Note that several of these topics are related to other proposals in this document.

## 4. *Others*

Technical seminars could cover the post-harvest and processing issues covered in the next subsection. These would include deep processing, meat mass and improved cold chain practices.

The Moldova Poultry NGP suggested that possible training sites included Georgia and elsewhere in the United States. Likewise, exchange visits between Ukrainian and Moldovan stakeholders can be arranged.

Association training, particularly by WFLO, already has been mentioned as a way to improve stakeholder organizations' ability to provide services to their members. WFLO already has selected a Moldovan participant for its Young Leaders program and has declared enthusiasm for train-the-trainer programs in organizational development.

### **“A” and “B Category” Activities - Post-harvest and Processing Technologies**

The activities in the next section can be conducted under the framework of collaborative research between the US-based technical team and the project staff, collaborators and stakeholders in the target countries.

To improve the food industry technologies and processes in Ukraine and Moldova, both “A” and “B Category” activities were identified. The “A Category” includes training, informational support and initial case studies which could be conducted with existing resources. However in-depth, collaborative research resulting in the significant updating of technological capacity will require financial support beyond the Project's capacity and is classified in Category “B”. It is believed that the results of the “A” activities could provide substantial justification for such financial support.

#### *1. Address the Absence of Modern Equipment*

The Ukraine Poultry NGP suggested that this could be done by a study of modern world technologies and their adaptation to local conditions, as well as the simplification of the introduction mechanism for high technologies. WFLO's Cold Chain Products and Services Council also can provide useful guidance in replacing obsolete or inefficient equipment. The Moldova Poultry NGP stated that addressing the lack of modern technologies for deep processing would increase the profitability of the poultry sector.

The Director of OSAR recommended establishing refrigerated warehouses, ice-producing plants and fish-freezing facilities on the sea-coast to be consistent with quality processing standards. Coastal refrigeration that uses freon-12 is prohibited and should be replaced to conform to Montreal and Kyoto protocols. The Director also recommended development of operational instructions for Ukraine under the PFID Project. These instructions should correspond to specifics of processing industry of Ukraine and comply with international standards. OSAR is ready to offer its services in fulfilling this task jointly with WFLO, as it has been administering refrigeration technology application in meat, dairy, poultry and fish industry for more than 5 decades. It also would be useful to develop a reference manual on refrigeration technology with computer software of quality control, drying losses and energy cost control.

#### *2. Economic Case Studies*

Economic case studies will be necessary to provide material for targeted business or marketing plans, guides for partnerships and justification for credit, VAT exemption or legislative reform. Other outcomes can include recommendations to attract investment and improve market operations. Possible topics for such studies include an examination of the partnership between Carneze, a Moldovan meat processor, and its Belgium partner “Brilliance”. In 1999 the two firms created a joint venture for sausage production from raw material supplied from Belgium. As the sausage was entirely exported to Russia and CIS countries it was exempt from VAT. An

examination of this partnership's mechanics could lead to recommendations for future joint ventures.

Other possible topics include the following:

- A feasibility study of central markets (as previously described in this paper), examining the existing markets and recommending how improvements can be instituted;
- A comparison of Carmez's energy and feed costs with others in the sector to determine which practices are most efficient;
- How to increase utilization and efficiency of refrigeration capacity;
- Identification (and promotion) of goods with export or domestic niche potential (as mentioned earlier); and
- Effects of the shadow economy on market operations.

The Project first should build on past studies, such as by CNFA and TACIS, as well as already-available market information services, such as the Ukrainian Institute for Agrarian Economics, for day-to-day prices. Any additional information will be acquired through protocols, the design of which will be coordinated by Dr. Harrison. World Lab and INZVM economists then would coordinate the implementation of those protocols. Results could be disseminated through the networks and support mechanisms developed by the Project.

### 3. *Other Post Harvest Practices*

*Evaluation of SCP and HACCP plans* – Dr. Moody plans to conduct follow-up visits to seafood processing facilities, which will have sent representatives to participate in his seminars to be conducted earlier in the year. At these individual plant visits to, he will use monitoring equipment to evaluate critical limits and the degree to which the participants' plans address those limits. Dr. McMillin recommends a similar audit of practices in meat and poultry processing plants.

*Processing of meat mass* - This refers to mechanically separated poultry meat. The Ukraine Poultry NGP stated that determining the allowed content of bone inclusions, during manufacturing process and in finished products without threat to human health, is necessary for a marketable product.

*Improved cold chain practices* - This would include more efficient temperature controls; in the IAR, it was stated that such measures would better maintain product safety and quality.

### **“B Category” Activities**

As previously stated, any proposals relating to these activities will be submitted when the project has established itself with tangible outcomes in the food industry.

## 1. *A Complete and Scientifically Justified Program for Animal Husbandry Development*

Both the Ukrainian and Moldovan Meat NGPs advocated this for the supply of genetically improved animals for meat processing. The Moldova Meat NGP stated that the main constraint of meat processing industry development is weakness of the following links in the technological chain: genetic improvement, animals breeding and fattening for processing supplies, slaughtering and processing, storage, transportation and commercialization of products.

World Lab wished to propose an activity to increase the number of hog stock in three high-potential Oblasts (Vinnitsia, Cherkassy and Khmelnytsky) in using the facilities of the Vinnitsa Project, as well as existing breeding and husbandry technologies available in Ukraine. A major component of the project would be training of young specialists and farmers. Using facilities of the expanded Vinnitsa Project - about 60 raion (district) offices in the three Oblasts - it would be possible to distribute hog stock among farmers without constructing feeding plants.

World Lab can develop a similar proposal for development of meat-type cattle breeds in Volhyn Oblast. Currently, the share of meat-type breeds in Ukraine is only 1.5-2% of overall stock. However, a high-potential meat breed was created in Volhyn where environmental conditions are extremely favorable for cattle.

## 2. *Targeted Assistance to Recovery of Poultry Supply*

The Ukraine Poultry NGP advocated the replenishment of the nation's poultry herd using intensive poultry breeding technologies and the provision of modern feeding technologies. Those technologies most often mentioned include breeding farms and soy-based feed. The Moldova Poultry NGP noted the excessive cost of poultry products, such as fodders and energy sources. The Project has resources to initially suggest a range of measures, relating to genetic improvement, nutrition and other aspects of improved poultry-raising practices that could improve raw material for poultry processing. However, significantly addressing this problem will require an application for additional funds.

### **Summary of Solution Activities Pertaining to Technical and Educational Capacity**

Below is a summary list of the recommended capacity building and technical activities, starting with the "A Category" activities to be instituted with the Project's existing resources. When these activities produce tangible outcomes in terms of client benefit, Project staff will consider preparing funding proposals for "B Category" activities.

#### *"A Category" Activities:*

- *HACCP and sanitation workshops* – for basic certification in all three sectors;
- *Economic training seminars* – including topics on markets, planning and export promotion;
- *Cold chain management training* – to be held at the WFLO Institute in Oklahoma;
- *Other training* – including exchange trips and association training; and

- *Training, informational support and initial case studies* – on such topics as post-harvest technology and practices, as well as economic issues

*“B Category” Activities:*

- *In-depth, collaborative research* – on such topics as post-harvest technology and practices, as well as economic issues;
- *A complete and scientifically justified program for animal husbandry development* – including an activity to increase the number of hog stock in three high-potential Oblasts; and
- *Targeted assistance to recovery of poultry supply* – using intensive breeding and feed technologies.

## **Section IV. Objective Five – Foster Business Partnerships**

### **General Process**

To accomplish this objective, the Project will provide or create conditions that facilitate business partnerships between client processors and outside entities that can provide capital or technology needed to develop the sector. Such entities could include international businesses involved in the food industry that wish to undertake joint ventures with Ukrainian or Moldovan processors. Additional possibilities are other donor-funded development projects (such as that administered by CNFA in Moldova) that have access to financial resources for promising businesses.

Possible actions for “laying the groundwork” that would facilitate these partnerships include case studies that would provide the justification for outside investment. These case studies will explore the necessary infrastructure and procedure needed to establish joint ventures, including such issues as legal systems and taxation. PFID will then promote the recommendations of those case studies through the professional networks of its key staff members.

Mr. Popov of Ukrmiasso recommended establishing a standing network called the American-Ukrainian Food Center. Its main objective would be the coordination of organizational and technical issues within the meat and poultry industry to foster business partnerships. Its tasks would include keeping all concerned American and Ukrainian structures well informed on various issues of meat and poultry industries. It also would render any assistance, including intermediation, in the exchange of raw materials, condiments, equipment and other material resources. Such exchange could occur between members of Ukrmiasso, Ukrptakhoprom or other associations and American companies that produce inventory and logistical resources for the meat and poultry industry

### **“C Category” Activities – Proposed Partnerships**

#### *1. Linkages with Other USAID-funded Development Projects*

PFID staff members have started to network with CNFA during the assessment period. Dr. Socican of INZVM has continued this collaboration in facilitating credit for a poultry plant as previously documented. Plans for expanding this networking can be outlined at the CNFA-

sponsored 9th Annual Agribusiness Alliance Meeting to be held on April 7 - 9 in Kyiv, Ukraine. Dr. Harrison, as the LSU Technical Team's economist, has made plans to attend this meeting to represent the Project and to network with other participants.

USAID also has suggested that the Project link its cold chain activities with CNFA's quick-freezing activities in Moldova. In addition, CNFA experts have offered to collaborate with regard to usage of local sources to produce high quality feed (utilizing soy protein) for local poultry breeding and processing plants. The FNFM has agreed to unify feed producers with raw material producers and processors with the purpose to form a Meat and Poultry Association Organization, thus furthering the integration advocated earlier in this paper.

Collaboration with ACDI/VOCA-sponsored training in agri-business topics also might be appropriate. ACDI/VOCA's Farmer-to-Farmer Project also might have training relevant to World Lab's livestock revitalization proposal.

## *2. Increased Cost-effectiveness of the Fish Industry in the Southern Region*

Both the IAR and the Ukraine Seafood NGP advocated the financing and development of cultural seafood and fish growing in the Azov and Black Sea basin. Their suggestions include widening the network of farms producing pond fish, mullets and mussels. The Port of Odessa could serve as one of the most important hubs for seafood processing in Eastern Europe by importing raw materials for value-added food processing. It has large facilities but has suffered from neglect over the last ten years. The Moldovan Seafood NGP proposed the implementation of new fish processing technologies using locally adapted American ichthyofauna (such as poliodon or channel sheat-fish) to be promoted in the Southern region of their country.

The establishment of a Cold Chain Service Center at the joint stock company that operates the Odessa Port Cold Storage can facilitate this regional development. These facilities already have advanced technology and quality maintenance support to fish catching enterprises in Southern Region. The objective of such an establishment would be the conversion of fruit and vegetable cold storage to an ice-making plant with a storage capacity of one thousand tons, a loading area of four hundred square meters and 500 square meters of net area. This conversion will provide, to fishing enterprises (many of whom are stock holders of the company), a wide spectrum of services, including:

- Qualified maintenance and technology tracking;
- Provision of artificial ice, potable water, salt and fish freezing upon request
- Provision of refrigerated transport;
- Ozone-friendly replacement of refrigerants;
- Consultations concerning equipment choices and production line;
- Disinfection and decontamination of vessels and holds; and
- Extension and training.

### 3. *Re-establishment of Current Assets*

The IAR stated that it is necessary to invest in the processing industry and establish joint ventures. The Ukraine Poultry NGP suggested that a possible way to replace or update equipment could be two-three year leasing of the equipment or credits with low interest rates. Mr. Gudyma recommended that the re-establishment of the domestic fishing fleet would rehabilitate the raw material supply for Ukrainian seafood producers. Other possibilities would involve modern technologies for deep processing, marking or packaging and insulated or refrigerated transport for cooled and frozen meat.

A possible partnering solution strategy would be the establishment of mixed joint companies with foreign capital. Mr. Brijatâi, Technical Director of the Carmez meat processor, gave the example of “Carmez International” a joint stock company with Belgian capital. In this case (previously mentioned in the sub-section on case studies) “Carmez International” produces only exports. It imports raw material for processing and exports all its products to Russia. According to current legislation taxes are paid neither to Moldovan nor to Russian governments. This and other laws that favor joint ventures should be noted for future partnerships.

### 4. *A Rural-Based Pilot-Project*

The INZVM, in a response to the IAR, recommended this to establish a model meat processing enterprise for in rural areas. Such a project could include a “mini-slaughterhouse” in a rural area with demonstration facilities for slaughtering technologies and complying with sanitary regulations. Many Ukrainian and Moldovan enterprises are ready to be partners to this proposal.

The objectives would include

- Inform and train local specialists;
- Study conditions for the increased involvement of international companies into the Ukrainian and Moldovan markets;
- Develop market relations in meat processing industry; and
- Familiarize local specialists and consumers with a greater quality and wider variety of products.

### 5. *Other Possibilities*

Other potential partnerships, proposed by Mr. Brijatâi to be fostered within the Project’s framework, include the following:

- A joint-venture to produce canned poultry meat for children; and
- Processing endocrine-enzymes of animal raw material for medical purposes.

## **Summary of Solution Activities Fostering Business Partnerships**

Below is a summary list of the recommended partnerships to be fostered, or “C Category” activities.

- *Linkages with other USAID-funded development projects* – such as CNFA;
- *Increased Cost-effectiveness of the fish industry in the Southern Region* – including establishment of a Cold Chain Service Center;
- *Re-establishment of current assets* – possibly based on the Carmez example;
- *A rural-based pilot-project* – a “mini-slaughterhouse” in a rural area with demonstration facilities; and
- *Other possibilities* – such as production of canned poultry meat for children or endocrine-enzymes of animal raw material for medical purposes

## **Section V. Conclusion**

This document will serve as a guideline for Annual Work Plans. In those plans, attention will be given on targets and indicators that will be expected as a result of conducting Project activities.