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**POSTHARVEST INSTITUTE FOR PERISHABLES**



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**First Quarterly Report  
on  
Potato Storage Activities  
in  
Russia and Ukraine**

**April, 1993**

**First Quarterly Report**  
**on**  
**Potato Storage Activities**  
**in**  
**Russia and Ukraine**

**Cooperative Project No: CCN-0006-A-00-3007-00**

**Grant No: CCS-0006-6-00-2028-00**

**For**

**USAID/NIS Task Force Office**

**By**

**The Postharvest Institute for Perishables**

**April, 1993**

**First Quarterly Report on Potato Storage Activities  
in Russia and Ukraine  
Postharvest Institute for Perishables**

**April, 1993**

This is the first quarterly report on Project No. CCN-0006-A-00-3007-00, Potato Storage Improvements in Russia and Ukraine. In addition, in this report are activities covered under Project No. CCS-0006-6-00-2028-00

**ACTIVITIES**

**1. Organizational Trip to Russia and Ukraine**

Mr. Richard Abbott visited Russia and Ukraine in January, 1993, to discuss with PIP's collaborative organizations the details of Project No. CCN-0006-A-00-3007-00, Potato Storage Improvements.

Mr. Abbott met with personnel from the Russian Potatoes Concern and the Ukrainian Institute for Potato Research. Agreements were consummated on exchange of potato specialists between PIP and the two organizations, and protocols (see Appendix I.) on the sites and uses of potato storage facilities being constructed in the two countries by AID financing (see Trip Report).

These agreements were required in order to proceed with our joint collaborative program. The two institutes in Russia and Ukraine are being required to perform tasks they have never done before, such as market virus-free seed potatoes and cater to fledgling private growers. Because of these significant changes, agreements were needed in order for PIP to be able to put pressure on the NIS organizations to hold up their part of the agreements.

## **2. Monitoring of Storage Facilities**

Mr. Bob McGee visited a number of potato storage facilities in Russia and Ukraine to monitor the status of both seed and eating potatoes in storage during the winter period.

He found numerous problems causing spoilage of potatoes. These included rough handling, poor ventilation systems and bruising during the harvesting period (see Trip Report).

## **3. Information Distribution**

### **A. Videos on Potato Bruising**

Three video films on reducing bruising of potatoes and produced at the University of Idaho are being changed to the PALS television system and will be sent to Russia and Ukraine for comments by potato specialists. If the videos are acceptable, PIP may translate them into Russian and distribute a number of copies in Russia and Ukraine. The titles of the videos are: The Harvester; Handling; and Harvest Chain Adjustment.

These videos could greatly help potato specialists in the NIS to reduce potato losses through some changes and renovations in harvesting methods.

### **B. Information Documents**

The Russian Potato Concern and the Ukrainian Institute for Potato Research have requested 122 research documents on storage and handling of potatoes which amounts to 1,282 pages of information.

This request is being filled by PIP's Information Center and will be sent to these two countries when the next specialist team goes to Russia and Ukraine in May.

C. Idaho Potato Handbooks

Russia and Ukraine have requested five of the comprehensive Idaho Potato Handbooks published by the University of Idaho. This publication offers a generous amount of current information on potato husbandry, handling and storage (see Table of Contents in Appendix II).

The technical information documents are a means to bolster the knowledge base of NIS potato specialists. PIP has been very encouraged by the requests for information.

4. **Training**

A. Construction Specialists

One potato storage construction specialist from Ukraine and one from Russia visited Idaho and Colorado in March to learn about the K-Span type construction and modern ventilation, cooling and humidification systems. The two specialists spent time in Colorado with Global Steel to observe its type of storage construction of which several will be constructed in the two countries. Also, the two specialists visited Industrial Ventilation Inc. (IVI) in Idaho to observe the type of ventilation systems which will be installed by this firm.

These two storage construction specialists are expected to be on site when the storages are built in the two countries. It is hoped their pre-exposure to modern potato storages and ventilation systems will contribute to a smooth construction process.

**B. Ukraine Marketing Training Request**

The Ukrainian Institute for Potato Research requested PIP to assist the organization to send a trainee to the states to learn about potato marketing techniques. Previously, Russian Potatoes Concern had requested the same training. Since the period of training would necessarily be longer than what was budgeted in the Cooperative Agreement, PIP is searching for alternative funding options.

There is urgent need for marketing reforms in food systems in NIS countries. Basic knowledge of food marketing systems is greatly lacking. This would be an opportunity to help alleviate this situation with potatoes, the second most important food crop in Russia and Ukraine.

**C. Concept Papers on Training**

Two concept papers on training were submitted to Russia and Ukraine for future consideration on training.

The training program proposed for Russia is a five-week course on cold storage management and business procedures in operating private sector wholesale food organizations. The large base storage facilities surrounding metropolitan areas in Russia (and Ukraine) are being terminated from

government funding. It was felt by the PIP team, after meeting with a number of these managers, that with management and business training, some of these facilities might be utilized as wholesale units to better cater to the private sector through commercial operations.

There has been no wholesale food system in the NIS as we know it in the U.S. Without a wholesale system, it is difficult and cumbersome for the market to establish day to day prices. A wholesale system is needed in the food distribution system to better guarantee smooth movement of food supplies at market prices.

In Ukraine, the same training program is proposed on training of base storage managers. In addition, it is proposed that a program be organized with the participation of U.S. firms, to help renovate Ukrainian potato harvesters and handling equipment to reduce bruising and subsequent losses of potatoes in storage. This would be an interim step as it is not anticipated that Ukraine firms will be in a financial position to purchase new equipment in the near future (See Appendix III).

#### **5. Grain Storage Monitoring in Russia, Ukraine and Kazakstan**

PIP received the plans for the grain storage facilities to be constructed in the above three countries by North American Agriculture, Inc. PIP has selected an agricultural engineer from the University of Idaho to inspect a random sample of the facilities after construction is completed. Construction is anticipated to begin on about May 1.

## **6. Up-Coming Activities**

The following activities are planned for April and May:

- A. Four specialists will arrive in Idaho on April 13 for three weeks training in storage facilities and potato seeds. Two are from Ukraine and two from Russia.
- B. Three specialists from PIP will visit Russia and Ukraine in May in the following fields: potato storage, postharvest physiology and plant pathology. The three specialists will interact with the two collaborating institutes regarding diseases and storage problems with potatoes. In addition, discussions will begin on the means of speeding up transmission of technical information and the sale of virus free potatoes to the emerging private sector in both countries.
- C. PIP is collaborating with several private potato firms to set up better representation in Russia to promote the marketing of improved U.S. equipment and supplies in the potato industry. A proposal will probably be submitted by a private potato storage firm under one of the private sector initiative contracts held by Tri-Valley Growers or Citizen's Network.

## APPENDIX II

## PROTOCOL

This protocol will confirm discussions held in Moscow between the Russian Potatoes Concern (RPC) and the Postharvest Institute for Perishables, University of Idaho (PIP), during the period January 27 to February 1, 1993.

### Exchange of Specialists

The parties to this protocol agree to cooperate during 1993 on a program of exchange of specialists in (1) potato seed, (2) potato storage management, (3) potato harvesting and handling equipment, and (4) potato processing.

Four RPC specialists in these disciplines will visit the U.S. during 1993 for periods of three weeks each at the invitation of PIP. Costs of these trips will be shared in accordance with the terms of the agreement signed January 11, 1993 by the two parties.

Four PIP specialists in the disciplines mentioned above will make one or more visits to Russia during 1993. The visits or additional specialists may be arranged upon mutual agreement of the two parties.

The dates for travel of the Russian and American specialists will be agreed upon later by means of exchanges of fax messages.

### Exchange of Technical Documents

PIP agrees to provide three additional copies of the "Idaho Potato Handbook". PIP provided to RPC copies of forms which can be used to order technical documents on potatoes from PIP's Information Center at no charge.

### Construction and Utilization of Potato Storage Building

Construction of a potato storage building at each of two sites with a total capacity of 5000 metric tons, financed by the U.S. Agency for International Development (AID), is the subject of an agreement between AID and Global Steel. Global Steel is entirely responsible for delivery of building components and equipment to the building site and for erection of the buildings in cooperation with a local building contractor. PIP's contribution to this effort consists of consultation on site selection and the payment of costs associated with travel to the U.S. for training by an RPC storage construction specialist.

It is understood that the storages will be used by RPC for both storage of seed potatoes and for training in storage management. It is likewise understood that private farmers will benefit from the storages and from the presence of U.S. specialists by being allowed to purchase seed potatoes and to participate in training programs arranged by RPC. RPC will announce the availability of seed potatoes and training to the private farmers associations and cooperatives. At least fifty percent of the seed potatoes will be sold to private farmers, and qualified farmers will have equal access to training.

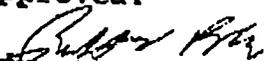


For Russian Potatoes Institute  
Dr. Jury V. Moiseev, President



For Postharvest Institute  
Harvey C. Neese, Director

Approved:



For USAID/Russia

R. Burke,  
Deputy Director

## P R O T O C O L

This protocol will confirm discussions held in Ukraine between the Ukrainian Potato Institute (UPI) and the Postharvest Institute for Perishables (PIP) during the period Feb. 2-5, 1993.

The parties to the protocol agree to cooperate during 1993 on a program of exchange of specialists in (1) potato seed, (2) potato storage management, (3) potato harvesting and handling equipment, and (4) potato processing.

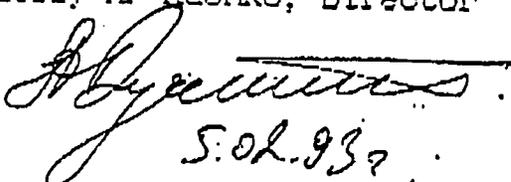
UPI specialists in these four disciplines will visit the U.S. during 1993 at the invitation of PIP. Costs of these trips will be shared in accordance with the terms of the agreement signed 13 Jan. 1993 by the two parties.

Four PIP specialists in the disciplines mentioned above will make one or more visits to Ukraine during 1993. The exact dates of travel for the Ukrainian and U.S. specialists will be agreed upon later by means of an exchange of fax messages. The UPI agrees to pay for hotel and meal costs of the U.S. specialists and to provide local transportation.

A related activity is the construction of a 5000 metric ton potato storage on the premises of the UPI. All arrangements for installation of this storage are the subject of a separate agreement between UPI and the supplier, Global Steel Inc. PIP agrees to support this activity by paying for a study trip to the U.S. for a UPI storage construction specialist, and to monitor performance of seed potato storage in this building by PIP specialists during 1993.

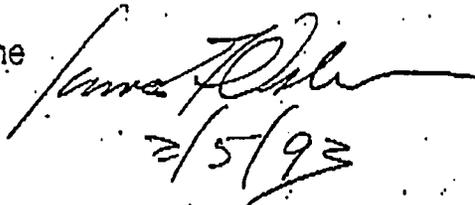
It is understood that the storage to be supplied will be used by UPI for both storage of seed potatoes and for training in storage management. It is likewise understood that private farmers will benefit from the storage and from U.S. specialists by being allowed to purchase seed potatoes and participate in training programs arranged by UPI.

For the Ukrainian Potato Institute  
Anatoly A. Kuchko, Director

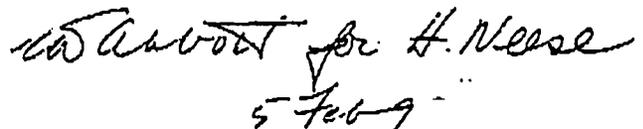
  
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Approved

USAID /Ukraine

  
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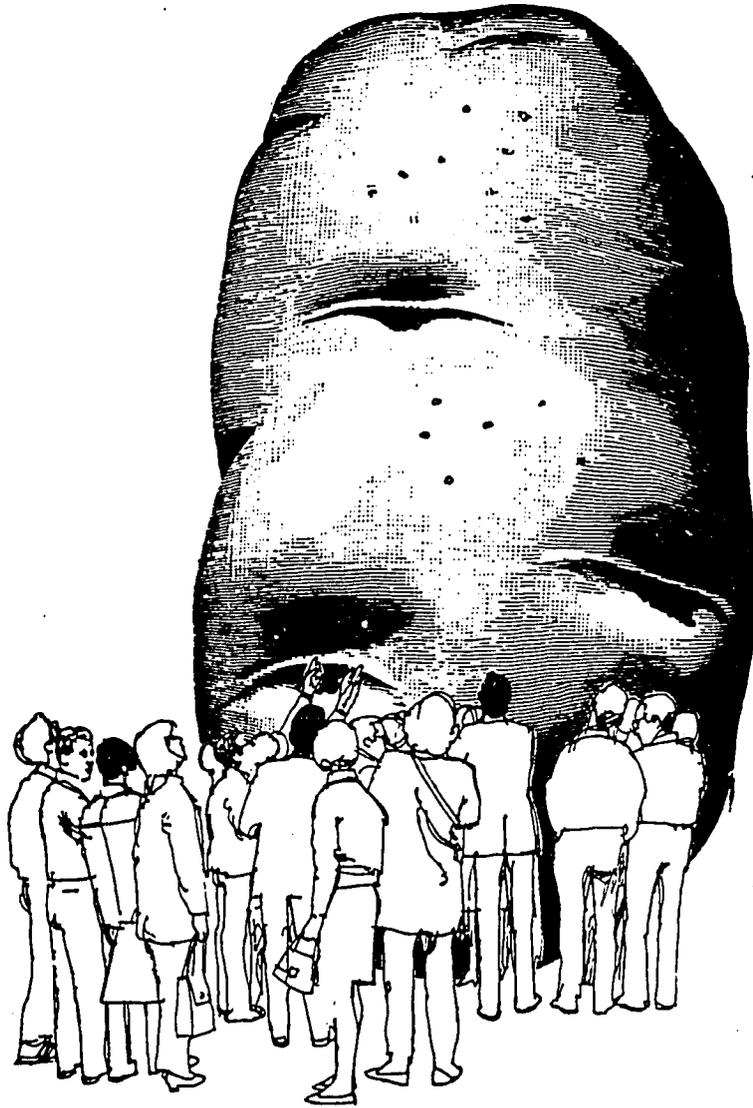
For the Postharvest Institute  
Harvey A. Neese, Director

  
5 Feb 93

## **APPENDIX II**

 University of Idaho  
Cooperative  
Extension System

# 1993 POTATO HANDBOOK



*College of Agriculture*

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# University of Idaho Potato Handbook

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Revised January 1993

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**APPENDIX III**

**POSTHARVEST INSTITUTE FOR PERISHABLES  
UNIVERSITY OF IDAHO**

**PROPOSAL FOR**

**Training of Private Sector Agribusiness Personnel in Business Development and Cold Storage Management of Potatoes and Other Perishable Commodities in Russia**

**March 29, 1993**

**Training and Exchange Program Summary**

The Postharvest Institute for Perishables (PIP) proposes to provide business and cold storage management training to potential private sector agribusiness personnel in Russia. Six to twelve "distribution base" storage unit managers of perishable commodities in the Moscow area would be selected to participate in a five-week short course held at the University of Idaho. Conducted by university faculty and private sector agribusiness representatives, the course would address constraints to efficient operation and management of these units identified by PIP during preliminary studies. Follow-up activities to U.S. training would consist of exchange visits of U.S. storage and business specialists to Russia for continued on-site training of the storage managers.

**Introduction**

A technical assistance team from PIP/University of Idaho visited Russia during July/August 1992. The objective of this visit was to evaluate the potato handling/storage system and make recommendations for additional technical assistance/training to improve the system. As a result of this initial contact and ensuing visits under PIP's Cooperative Agreement with USAID, PIP identified opportunities for short term training of storage managers of potatoes and other perishable products. If implemented, this training could promote significant reduction of postharvest losses and thus increase availability of high quality perishables on the market. The identified needs and proposed training activities are described below.

**Business Development and Cold Storage Management of Perishable Commodities**

Perishable agricultural commodities are stored in huge distribution base cold storage units bordering major metropolitan areas. Over 20 of these units are found in and around Moscow. Other large cities have similar storage facilities. Managers of these storage facilities are in the process of converting them from state owned organizations into private-profit making ventures. Some are being developed into joint stock companies where workers hold part ownership. However, PIP's visits have revealed that the storage facilities will be hampered in their attempts to make a profit, in no small part due to managers' lack of experience in managing/operating profit-making ventures. With relevant training for managers, PIP believes some of these larger storage distribution units could be developed into profitable private sector wholesale operations.

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PIP also found that some of the storage managers are unfamiliar with basic principles of perishable storage and proper operation of cold storage facilities and ventilation/humidification systems. Improper control of storage environments and poor management of storage facilities lead to significant losses during storage and to reduced quality product after storage.

### **The Training Program**

PIP proposes that six to twelve storage managers/management trainees be identified to participate in a five-week short course at the University of Idaho. This course will address principles of storage management and postharvest physiology and application of these principles to controlled atmosphere, cold storage and other storage environments. Participants will also learn basic business principles and practices that will aid in the transition to a market-based economy. The course will provide participants with the fundamentals of market economics and deal with issues of marketing and finance.

Faculty from the University of Idaho and Washington State University who are specialists in the fields of business operations management, economics, agricultural economics, biology, postharvest physiology, horticulture, biosystems engineering, quality control and environmental policy will conduct the course. The classroom format will vary from lectures and private sector guest speakers to collaborative problem-solving sessions and hands-on exercises. All sessions will be in English with simultaneous translation into Russian. Training notebooks will be developed in Russian and English.

One week of the short course will be devoted to a tour of the Pacific Northwest, a region which reportedly has the world's highest concentration of privately owned controlled atmosphere storage facilities. Participants will observe first-hand how postharvest storage management practices are applied to perishable crops such as potatoes, apples, and onions in the U.S. There will be an opportunity for participants to interact with growers, warehouse and storage facility managers and commodity brokers who can provide insights into the value and nature of private sector postharvest storage as a preservation and marketing tool.

PIP will videotape the classroom and working group sessions of the short course, including the guest lecture portion. The videos will be edited, dubbed in Russian, converted to the PALS system, and made available for use in Russia during the post-course visits (see below) or by request through the Postharvest Institute for Perishables Information Center (PIPIC).

PIPIC will provide upon request, for a twelve month period following the end of the short course, information to former short course participants on the following topics:

- firms that manufacture, supply, sell, install and repair new and used refrigeration and/or cold storage equipment
- storage of perishable commodities

- business management
- information networks

Eight to ten weeks after the end of the short course, PIP will send a business management specialist and a cold storage management specialist to Russia for four weeks to conduct follow-up on-site visits and workshops for former short course participants. Site visits will afford the distribution base managers the opportunity to ask questions specific to their operation and to discuss problems requiring "hands-on" attention after they have had an opportunity to apply the principles they have learned. It is proposed that the PIP specialists visit a number of storage operations within a ten-day period. The site selections will be based on information gathered in the needs assessment survey and on interest shown by individual managers during the short course.

Following the on-site visits, the PIP specialists will conduct a three-day workshop. This workshop will be designed to enhance the skills the participants gained in the short course, with particular attention given to training the distribution base managers to become trainers of other managers. Specialists will emphasize the basics of operations management (planning, organizing, leading and controlling) and human resource management (group problem solving techniques, efficiency). Managers will be encouraged to employ trouble-shooting techniques in handling both technical and business problems. A session on leadership skills will show how these techniques can be fostered in other workers. Managers will be shown how to make effective use of the video series to instruct employees and trainees.

### **Participant Identification**

PIP has made initial contacts with individual distribution base managers in Moscow. Many are therefore aware of PIP and the work PIP is conducting through USAID. PIP is working closely with the Russian Potato Concern. This organization has agreed to assist PIP by recommending candidates for training. In addition, PIP will work with Dr. Virichev of the Moscow Food Department, which has had responsibility for the distribution base warehouses in the area surrounding Moscow. The Volunteers in Cooperative Assistance (VOCA) office in Russia will help to identify other potential short course candidates from among current managers of the base storage units and managers and trainees of similar operations in areas outlying other major cities.

### **Budget**

PIP will provide an itemized budget for the training program described above upon request.

### **Implementation Schedule**

Implementation of the U.S. portion of the business development/cold storage management training activity should be completed prior to September 1993, as this is the beginning of the busy period for the distribution base storage units.

**POSTHARVEST INSTITUTE FOR PERISHABLES  
UNIVERSITY OF IDAHO**

**PROPOSAL FOR**

**Training of Private Sector Agribusiness Personnel in Postharvest Handling and Cold Storage Management of Potatoes and Other Perishable Commodities in Ukraine**

**March 29, 1993**

**Training and Exchange Program Summary**

The Postharvest Institute for Perishables (PIP) proposes to provide postharvest handling and business management training to potential private sector agribusiness personnel in Ukraine. Two training activities are proposed. First, six to twelve "distribution base" storage unit managers of perishable commodities in Ukraine would be selected to participate in a five-week short course held at the University of Idaho. Conducted by university faculty and private sector agribusiness representatives, the course would address constraints to efficient operation and management of these units identified by PIP during preliminary studies. Follow-up activities to U.S. training would consist of exchange visits by U.S. storage and business specialists to Ukraine for continued on-site training of the storage unit managers. Second, PIP proposes to utilize the services of Idaho-based manufacturers of potato harvesting/handling equipment to set up and implement a training program in Ukraine and the U.S. on proper renovation, maintenance and use of existing equipment. U.S. and Ukrainian equipment specialists will also participate in exchange visits to both countries as part of this training activity. It is envisioned that the involvement of the Idaho firms in the training program would eventually lead to joint ventures or licensing agreements with Ukrainian manufacturers.

**Introduction**

A technical assistance team from PIP/University of Idaho visited Ukraine during July/August 1992. The objective of this visit was to evaluate the potato handling/storage system and make recommendations for additional technical assistance/training to improve the system. As a result of this initial contact and ensuing visits under PIP's Cooperative Agreement with USAID, PIP identified two major topics for short term training of postharvest handlers and storage managers of potatoes and other perishable products. If implemented, this training could promote significant reduction of postharvest losses and thus increase availability of high quality perishables on the market. These topics and proposed training activities are described below.

**I. Business Development and Cold Storage Management of Perishable Commodities**

Perishable agricultural commodities are stored in huge distribution base cold storage units bordering major metropolitan areas. Approximately 13 of these units are found near Kiev. Other large cities have similar storage facilities. Managers of these

storage facilities are in the process of converting them from state owned organizations into private-profit making ventures. Some are being developed into joint stock companies where workers hold part ownership. However, PIP's visits have revealed that the storage facilities will be hampered in their attempts to make a profit, in no small part due to managers' lack of experience in managing/operating profit-making ventures. With relevant training for managers, PIP believes some of these larger storage distribution units could be developed into profitable private sector wholesale operations.

PIP also found that some of the storage managers are unfamiliar with basic principles of perishable storage and proper operation of cold storage facilities and ventilation/humidification systems. Improper control of storage environments and poor management of storage facilities lead to significant losses during storage and to reduced quality product after storage.

### **The Training Program**

PIP proposes that six to twelve cold storage managers/management trainees be identified to participate in a five-week short course at the University of Idaho. This course will address principles of storage management and postharvest physiology and application of these principles to controlled atmosphere, cold storage and other storage environments. Participants will also learn basic business principles and practices that will aid them in the transition to a market-based economy. The course will provide participants with the fundamentals of market economics and deal with issues of marketing and finance.

Faculty from the University of Idaho and Washington State University who are specialists in the fields of business operations management, economics, agricultural economics, biology, postharvest physiology, horticulture, biosystems engineering, quality control and environmental policy will conduct the course. The classroom format will vary from lectures and private sector guest speakers to collaborative problem-solving sessions and hands-on exercises. All sessions will be in English with simultaneous translation into Russian. Training notebooks will be developed in Russian and English.

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PIP will videotape the classroom and working group sessions of the short course, including the guest lecture portion. The videos will be edited, dubbed in Russian, converted to the PALS system, and made available for use in Ukraine during the post-course visits (see below) or by request through the Postharvest Institute for Perishables Information Center (PIPIC).

PIPIC will provide upon request, for a twelve month period following the end of the short course, information to former short course participants on the following topics:

- firms that manufacture, supply, sell, install and repair new and used refrigeration and/or cold storage equipment
- storage of perishable commodities
- business management
- information networks

Eight to ten weeks after the end of the short course, PIP will send a business management specialist and a cold storage management specialist to Ukraine for four weeks to conduct follow-up on-site visits and workshops for former short course participants. Site visits will afford the distribution base unit managers the opportunity to ask questions specific to their operation and to discuss problems requiring "hands-on" attention after they have had an opportunity to apply the principles they have learned. The site selections will be based on information gathered in the needs assessment survey and on interest shown by individual managers during the short course.

Following the on-site visits, the PIP specialists will conduct a three-day workshop. This workshop will be designed to enhance the skills the participants gained in the short course, with particular attention given to training the distribution base managers to become trainers of other managers. Specialists will emphasize the basics of operations management (planning, organizing, leading and controlling) and human resource management (group problem solving techniques, efficiency). Managers will be encouraged to employ trouble-shooting techniques in handling both technical and business problems. A session on leadership skills will show how these techniques can be fostered in other workers. Managers will be shown how to make effective use of the video series to instruct employees and trainees.

### **Participant Identification**

PIP has made initial contacts with individual distribution base unit managers in Kiev. Many are therefore aware of PIP and the work PIP is conducting through USAID. PIP is working closely with the Ukrainian Potato Research Institute. This organization has agreed to assist PIP by recommending candidates for training. The Volunteers in Cooperative Assistance (VOCA) office in Ukraine will help to identify other potential short course candidates from among current managers of the base

storage units and managers and trainees of similar operations in areas outlying other major cities.

## **II. Potato harvesting equipment renovation, maintenance and manufacture**

Improper maintenance and use of harvesting/handling equipment and lack of proper equipment cause significant damage to potatoes during harvest, leading to increased losses during storage. Much of the potato harvesting/handling equipment in Ukraine needs to be replaced with modern equipment that minimizes damage. Potato specialists in Ukraine are aware of this problem but because of the economic situation are not presently able to purchase new equipment in large quantities.

### **The Training Program**

A training program to assist Ukrainian potato equipment specialists to renovate older harvester and handling equipment to reduce damage is an important interim step to eventual replacement of this equipment. PIP proposes to utilize the services of several Idaho-based manufacturers of potato harvesting/handling equipment to set up and implement a training program in Ukraine and the U.S. on proper renovation, maintenance and use of existing equipment. It is envisioned that the involvement of the Idaho firms in the training program would eventually lead to joint ventures or licensing agreements with Ukrainian equipment manufacturers.

Initially, equipment specialists from the Idaho firms would go to Ukraine to meet with Ukrainian harvesting/handling equipment specialists to develop an agenda for the renovation program. A collaborative plan would be developed to set up the training program, which would include the following points:

1. Discussions with Potato Institute and other Ukrainian organizations to develop a renovation training module.
2. Identification of renovations to existing harvesting/handling equipment in Ukraine that would have a significant impact on reducing potato damage and losses during storage.
3. Determination of the availability of required supplies and parts for equipment renovation.
4. Drafting of schedule for location, time period, number of participants and curriculum of training program.
5. Drafting of schedule for Ukrainian specialists to come to the U.S. for observation of the companies' manufacturing facilities and additional training on repairs of potato harvester/handling equipment.

6. Discussions on possible licensing agreements between interested Ukrainian firms and Idaho firms for future manufacture of harvesting/handling equipment in Ukraine.

### **Participant Identification**

Training participants would be identified through the Ukrainian Potato Institute and the Ministry of Agriculture. Participants would include equipment construction engineers and mechanics who are presently responsible for harvesting/handling equipment maintenance. Participants would be chosen from the Kiev region as well as from other important potato-producing regions of Ukraine.

### **Budget**

PIP will provide an itemized budget of the proposed training program upon request.

### **Implementation Schedule**

- I. Implementation of the U.S. portion of the business development/cold storage management training activity should be completed prior to September, 1993 as this is the beginning of the busy period for the distribution base storage units.
- II. Implementation of the potato harvesting/handling training activity should begin well in advance of the harvest season. U.S. equipment specialists should be on site in Ukraine during the harvest season in order to assess problems and assist with equipment adjustment and maintenance.