



FINAL REPORT

(4 Study Tours to the U.S.)

Four MTM Productivity Study Tour Program for
Kharkiv, Ukraine

2003

USAID Grant #121-G-00-99-00728-00

Covering industries:

Grain Production

Aquaculture

Livestock Production

Agricultural Machinery

Center for Economic Initiatives (CEI)

Prepared by: Leland M. Cole

Phone: 513-831-6741

E-mail: lcole@ukrainebiz.com

Table of Contents

1.	Executive Overview	1
2.	Program Background	2
3.	Program Overview	3
	3.1 Overall Observations	3
	3.2 Grain Production.....	3
	3.3 Aquaculture	7
	3.4 Livestock Production.....	9
	3.5 Agricultural Machinery	10
	3.6 Internal Ukraine Study Tour.....	12
	3.7 Follow-up.....	12
	3.8 Summary.....	12
4.	Overall Projected Benefits	14
5.	Additional Activities & Benefits.....	16
	5.1 Associations.....	16
	5.2 Networking	16
	5.3 Success Video.....	16
6.	Tour Overview	17
7.	Participant Selection Process	18
8.	Program Schedules.....	20
	8.1 Grain Production.....	20
	8.2 Aquaculture	23
	8.3 Livestock Production.....	26
	8.4 Agricultural Machinery	30
9.	Participants.....	33
10.	Tour Logistics	37
11.	Exit Interviews of Tour Participants	40
	11.1 Grain Production.....	40
	11.2 Aquaculture	63
	11.3 Livestock Production.....	82
	11.4 Agricultural Machinery	90
	11.5 Internal Ukraine Study Tour.....	100
Appendix		
A.	U.S. Host Organizations.....	105
B.	CEI Associates	109

FINAL REPORT - MTM PRODUCTIVITY STUDY TOURS FOR KHARKIV, UKRAINE

1. Executive Overview

There has been a dramatic and positive impact of the Center for Economic Initiatives (CEI) study tour program on the basic cost of living and on industries in Kharkiv, Ukraine. This report describes the program details. This program was funded by grant 121-G-99-00728-00 from the U.S. Agency for International Development (USAID).

This program consisted of four, 21-day study tours, each targeted at a different industry sub-sector. In addition, a 4 day internal Ukraine study tour to Kherson and Dnepropetrovsk was undertaken. This program was implemented by the Perspectives Center in Kharkiv.

The program is summarized in the following table. All dates are in 2003.

Study Tour	Selection Dates	Tour Dates	Participants	Organizations visited
Grain Production	Jan 26 - Feb 10	May 26 – June 15	16	20
Aquaculture	Jan 26 - Feb 10	June 30 – July 20	15	16
Livestock Production	March 30 - April 14	August 11 – 31	13	24
Internal Ukraine Agricultural Tour	None	August 13 – 14	33	2
Agricultural Machinery	March 30 - April 14	September 8 – 28	13	15

Under this grant, the CEI conducted four Marshall Plan type study tours to the U.S. 2003 and one internal Ukraine study tour to Kherson and Dnepropetrovsk. As a result of the shortened grant period, it was not possible to perform any follow-up activities. CEI believes that participating farms and firms will achieve significant benefits in terms of improved production, increased profits, reduced costs, improved quality, and reduced losses in virtually each sector, but this could not be verified. The greatest benefits were undoubtedly in agricultural production, Ukraine's traditional area for great potential reform. Significant benefits were also realized in overall management, customer and employee relations.

2. Program Background

Kharkiv is the second largest city in Ukraine and located in the Eastern part of the country near the Russian border. A majority of the population speaks Russian although many now speak and understand Ukrainian.

CEI, located in Cincinnati, Ohio has had a long standing relationship with Kharkiv, its sister city in Ukraine. Each year hundreds of people travel between the two cities for business, cultural and personal reasons.

Based on this special relationship, in 1997 USAID awarded CEI a grant for two pilot MTM Productivity Study Tours for Kharkiv, Ukraine. In 1999, it awarded CEI a second grant for five additional study tours. In 2001 USAID awarded CEI this grant for 6 additional study tours, 4 for Kharkiv and two for Slavutych. The benefits of this program for the economy of the Kharkiv region have been significant. Government officials in the Kharkiv region have reported that 60% of the firms that participate in the program have doubled their efficiency. New marketing programs have been initiated, new products introduced, and profitability improved; most importantly, management has gained the confidence to make difficult decisions.

By 2003, CEI had been operating in Kharkiv for 8 years and probably has a better knowledge of Kharkiv industry than any other U.S. based organization. Also, very significant economic benefits had resulted to the benefit of the firms and the Kharkiv oblast.

3. Program Overview

3.1 Overall Observations

CEI has now conducted a total of 17 study tours in Ukraine and in many ways the 4 program under this grant extension were similar to the others. The detailed procedures continue to be refined and enhanced and this results in a smoother running program. Probably the biggest difference is that there was not time in the grant period to conduct the follow-up program that would best be conducted 6 to 12 months after the last study tour.

Based on the exit interviews conducted with each participant, significant results will be realized. Of course it is premature to come to any concrete conclusions. That would require follow-up by the CEI and the Tour Directors because only they will have the familiarity and rapport to determine the true benefits.

Participant recruitment became more of a problem with this program. CEI believes that most of the good candidates in Kharkiv have already been on the tour. The large state organizations appear not to be progressive enough to be able to take advantage of the program. In some cases good candidates were selected but dropped out before the tour. CEI suspects that unknown forces may have controlled or triggered these situations.

At the conclusion of each study tour, each participant was interviewed to record what they had learned and to measure the potential impact of the tour on their individual firms. Each had concrete plans to introduce productivity changes in their firms. Each participant had identified new products they could add with a minimum of investment. Typically, the firms felt that the new products would lead to significant sales increases. Many participants estimated that the technical improvements would result in cost reductions of up to 30%. These and management changes would lead to increased profitability of about 20%.

Almost every host company discussed the importance of increased volume to decrease costs. This implied a greater need for effective marketing and for specialization. Both were opposites of the business thinking in Ukraine where there is little advertising and each firm struggles to diversify into different product lines and even different industries.

3.2 Grain Production

It was the most comprehensive grain tour undertaken so far, exposing the group to entire cycle of grain production, technology, management, marketing, R&D, academia, storage, transportation and logistics etc. It was important to show the Ukrainians the entire US grain sub-sector and its functional linkage to various organizations that play key role in achieving such high agricultural outputs never achieved in history by any other nation on earth.

Ukraine with its limited resources, investments and technological inputs had so far done relatively well in agriculture and produced reasonable outputs. However, given the fact that with an ongoing and successful privatization, legal land reform, agricultural re-structure, investment, advanced technological, management and other inputs etc., Ukraine could be a huge world class potential agricultural player and a major emerging exporters like Brazil, Argentina.

At the completion of the Kharkiv Grain study tour, CEI conducted 30-minute interviews with each of the participants to discuss the U.S. farm visitation program and to learn about the benefits, if any, for the participants. It was anticipated that there would be some major benefits in farm marketing, which currently happens to be the key issue and drawback in Ukraine, but lots of other benefits involving management and technology were learnt by every participant.

The results far exceeded CEI's expectations. In summary, the farm improvements learned include:

Technology Related

- Farm executives saw for themselves the overall rapid conversion of US agriculture to a no-tilling conservation technology – the concept that was repeatedly reinforced at every level of their meetings with agricultural experts. The group is determined to increase use of no-till farming within the framework of a legal change in Ukraine, allowing use of transgenic seeds. Using no-tilling technique, they would be able to reduce fuel consumption on the farm by 50%. Fuel now consumes 60 - 70% of the total cost of farm operations. In addition, the amount of soil erosion in no-till farming is reduced from 9 tons per acre to 2.5 tons per acre. The amount of evaporation is significantly reduced, which is so important to draught prone areas of Ukraine. Most of the Ukrainian grain tour participants in USA felt they could go to low-till (surface-till) or no-till farming with their current or modified equipment. A full pledged no-tilling technique as seen in USA, if replicated in Ukraine, could result in savings of Hr. 200/hectare.
- The group showed their interest in the anchor drill seeders, which can be locally produced and replicated. The accuracy of seeding and plant spacing is very important factor for getting a higher grain yield.
- The use of 100% profitable “Roundup Ready” - Genetically Modified Seeds (GMOS), pesticides and herbicides, various fertilizer products from Monsanto and other major agro-industries would have great benefits to the farms as it would reduce both fuel and labor costs. It would be necessary to use transgenic seeds, which are resistant to European corn borers causing serious havoc to corn growers in Ukraine reducing over usage of chemical pesticides.
- Land reclamation and soil conditioning technique as seen in USA using GPS technology are great learning that Ukrainians are interested to replicate. Given the fact that Ukraine is a country with 5% land having salt deposits, fortunately is also one of the few countries with advanced space research facilities. It is important that GPS technology be developed locally and used for agricultural usage.
- Seed calibration technique as used in USA by major seeds manufacturers, if replicated in Ukraine, could increase grain production and also efficiency by 15-20%.
- The group vowed to increase soy cultivation by developing right kind of seed, suitable to the local climatic conditions. Most Farm executives now plan to specialize on corn and soybean because of their higher prices (Hr. 700/ton) and higher protein content, especially for fodder for the cattle. Even though the Soy seeds are expensive (Hr. 1,500/ton) has the added advantage that is it high in protein and adds nutrients to the soil, unlike sunflower (which depletes nitrogen from soil) - a traditional crop in Ukraine.

Legal, Organizational and Management

- The participant from the Oblast Agricultural Administration vowed to set up: a) Legal-aid service for the farmers; b) Provide Market Analytical Services for boosting trade and sales; c) An accurate weather forecasting service geared to farming needs.
- The participants had an opportunity to visit one nationally important trade association and one cooperative. They were convinced that organizations such as these would have great benefits in Ukraine to reduce overhead costs, improve technology and expand their overall marketing skills. They were determined to set up similar organizations upon their return to Kharkiv.
- The farm executives noted that U.S. farms were more specialized and grew 2 or 3 crops. By following the U.S. example, each participant felt that they could substantially reduce their costs of production and improve their profitability by 40 to 50%. In contrast, the government at the oblast (state) and rayon (district) level now instructs the farms which crops they are to grow. Typically each farm is required to grow 7 to 9 different crops. This requires that each farm have equipment, seeds, fertilizers, herbicides and management for each crop, which is a major drainage of resources.

Sales and Marketing

- Ukraine has 35 Commodity Exchanges (including 2 in Kharkiv). However, Ukraine doesn't have futures market like Chicago Board of Trade (CBT). One of the important objectives was to impart a first hand exposure to the workings of functioning market that safeguards horrible fluctuations that can cripple the entire grain industry. The two participants in the group involved with future market development needed enormous amount of information, to replicate back home similar trading houses, where big international traders could eventually participate. This would create a healthy domestic and international market. It was also important to develop concepts of forward contracting and hedging in Ukraine. The group in general learnt agricultural commodity practices, mechanism of pricing and sales aspects.
- The participants noted that products produced by US farmers are very competitive and hence Ukrainians felt the urgent need to reduce their overall production costs and change their mode of operation from pure farmers to able and successful businessmen.
- Use of Grain Dryers for upgrading and conditioning of harvested crops is an important technical and business learning. In the absence of grain drying, the loss due to molds and moisture amounts to 30%. Whereas, the upgraded and improved grain with higher gluten content can gain 200% in price. Grain price needs to be achieved by developing improved drying and storage facility at the farm.
- Availability of farmer's own storage capability determines farmers bargaining power for selling grain. It also avoids grain loss (15-20%) as incurred by transportation to a grain silo that traditionally formed the old state controlled storage concept and replaced by the same structure with a so called "privatized face". It is of paramount importance to farmers in new Ukraine, to have his own storage silos as a major strategic marketing investment. The group was glued to the low cost Silo manufacturing operation in USA, so necessary in Ukraine now.

The overwhelming conclusion of these exit interviews was that there should be less government control of the industry and that the farms should be able to make their own financial decisions. As a result, without additional investment, the farms would be able to increase their productivity and profitability, resulting in an improvement in the farm standard of living.

This Management, Technology and Marketing (MTM) Productivity Study Tour program for Kharkiv, Ukraine consists of four study tours this fiscal year 2003. This report describes Tour #1 for the grain producer sub-sector.

The purpose of the program is to give rise to a rapid and visible increase in living standards for the Ukrainian population as a whole by introducing key Ukrainian managers in key industrial and agricultural sub-sectors to modern management, technology and marketing methods in the U.S. The Center for Economic Initiatives (CEI) selected three programs for agricultural sub-sectors (Grain, Aquaculture and Animal Husbandry), one for Agricultural Machinery, in order to introduce the benefits of this Marshall Plan type technical assistance program to Ukraine. All of these sub-sectors produce products that are basic to the needs and growth of the Ukrainian population.

Major achievements of the program for the Ukrainian companies were:

- and modified products and technologies were identified that can easily be added to existing practices with limited investment;
- An awareness and appreciation of new management techniques;
- Many productivity changes were learned that would increase product production costs and increase productivity;

- A greater appreciation of the role of transportation, storage, distribution, marketing, merchandising and dynamic fair price payments to all concerned;
- New products and equipment they can purchase from the U.S.
- A greater openness and awareness of changes they can make in their own farms.

The study tour group included 11 high-level farmer participants, 1 R&D Manager, 1 grain market expert and 2 agricultural officials. Under the direction of the Program Director, the group of 15 visited 26 organizations over a five-state area. The tour area covered Ohio, Kentucky, Illinois, Iowa and Missouri, which was quite adequate for grain producing sub-sector.

The sites visited were carefully selected to meet the diverse needs of the group. Since the tour group represented different sizes of businesses and profiles, each participant visited some plants or organizations that were within their area of interest. Moreover, there was much to be learned on every visit since management, marketing and distribution were common to all.

The host company determined the length of each visit. In almost all cases, the visits were scheduled to last three hours and were planned for the morning or afternoon. At each site there was a short introduction by management followed by a tour of the facilities. A question and answer period followed. In almost all cases, this was an extremely lively session and extended far beyond the initial schedule. The U.S. hosts were extremely generous with their time and information. Were it not for the need to maintain schedules, many visits would have been significantly longer. The enthusiasm of the participants rubbed off on the host companies and many offered to host future programs.

During their stay in the U.S., the group visited 2 grain purchasing, processing storage and transportation facility; 4 grain farms; 1 co-op feed plant; 1 co-op agronomy service operations; 1 educational institution; 1 state agricultural marketing regulatory and organization; 1 natural pest control management R&D station; 1 mercantile commodity trading market; 2 giant agro machinery manufacturers; 2 international seed developers and genetic engineering R&D operations; 1 grain association; and 2 grain storage and dryer manufacturing operations. In addition, they heard lectures from various experts on a variety of subjects. A description of the individual host organizations is included in this report. As a result, the participants were able to get a very broad view of their industry in the US.

The length of the tour, 20 days, appeared to be just about right. Time was needed for the new concepts to be fully understood and appreciated. Few participants would have been able to be away for a longer period of time.

Just as previous tours, when the group first arrived in the U.S., they had various fixed ideas about conducting their business. Although the participants were looking for new ideas, they were not necessarily open to new ideas. By the end of the tour, this attitude had completely changed. Most were eager to return and try out new ideas and products. The evolution in thinking was remarkable.

One of the frequently asked questions was “How do the Americans make the grain products at such a low cost?” Almost every host company discussed the importance of increased volume to drive down costs. This implied a greater need for effective mechanization, marketing and for specialization. These were exactly the opposite of the business thinking in Ukraine as each farm struggles to diversify into as many different crops and even product lines.

A surprising degree of bonding took place between the tour members. At the conclusion of the tour most agreed to meet again and possibly form some trade information exchanging association. Several were exploring business arrangements, among themselves.

Some of the participants expressed serious interest in American products and reproducing or modifying similar equipment back home. The Program Director has agreed to facilitate communications between Ukraine and the American companies, if such an interest materializes.

At the conclusion of the study tour the group was interviewed in depth to record what they had

learned and to measure the potential impact of the tour on their individual farms. CEI was pleased to learn that all had concrete plans to introduce productivity improvements to reduce their costs of production, add new products to their lines, and institute management changes. These findings are recorded in the Evaluation by Tour Members included in this report.

This Marshall Plan type grain study tour was deemed a great success by all the participants and by CEI. Only by seeing with their own eyes, were these industry leaders able to learn new techniques and discover new products they could apply or reproduce back in their firms without the need of large new investments.

3.3 Aquaculture

The aquaculture study tour took place from June 30 to July 20, 2003. The group of 15 visited 16 organizations in Ohio, Indiana, and Kentucky. These included fish farms, universities, a cooperative, retail shops, and others. Extensive press coverage was received as was the case with most of the CEI study tours. The most interesting of these was an article on the front page of the Sunday New York Times.

It was an active tour group and very interested in learning how the American aquaculture industry works. They were exposed to many new ideas, not only in production, but also in marketing, technology, and management. We were also greatly encouraged by the bonding that took place among tour members. There appears to be genuine interest in working together in the future to build a better Ukraine.

The host organizations made the Ukrainians feel welcome and showed them considerable hospitality. The host companies made themselves available for extensive discussions and were genuinely interested in listening to and answering all questions put to them, and providing study tour members with as much information as possible.

Once a clear picture of the aquaculture industry was in hand, the implementation phase could begin. With the aid of a grant from USAID, CEI contracted with two organizations in the city of Kharkiv, Ukraine to begin the tour process. The first company, Perspectives NGO, was hired to advertise for applicants for the tour, handle the applications that came in, organize the pre-tour seminars, and also to handle the task of preparing the participants for the trip to the United States. The second organization contracted with was the International Executive Service Corps (IESC). This organization's task was to pre-qualify the applicants before the selection process. This involved interviewing the applicants to verify the information in the application, ask additional questions to clarify the application, visit the farms to get a clear idea of the operation, and finally to pre-qualify the applicant on a predetermined set of points and scale.

After the applications had been processed, and the applicants had been interviewed and pre-qualified, members from CEI traveled to Kharkiv, Ukraine for two weeks to begin the next stage. A seminar was put on for all the applicants describing the background and purpose of CEI, and a more in-depth overview of the proposed tour. During the seminar, the Tour Director, a specialist in the aquaculture industry, gave a multimedia presentation on the U.S. Aquaculture Industry in general. The group was then urged to discuss the specific concerns of their industry and any areas they felt would be especially of interest to them during the tour. It was explained that this tour was for their benefit and that CEI was interested in tailoring the tour to what they were most interested in seeing. An interesting note here is that due to tax and water issues within Ukraine, recirculating systems held the most interest for the majority of the candidates, even though these systems were not in use within the Oblast.

A team of two members from CEI then interviewed each applicant and qualified them separately on a scale similar to that used by IESC. The scores were averaged together between CEI members and then averaged or compared to those by the IESC. The top sixteen (16) candidates were then chosen as the

final participants. By using this selection process, three separate opinions were combined together to select each applicant; this kept the selection process fair, transparent and competitive. The size of the group was based on past experience by CEI. It had been found that a tour group of 20 or more was too large for many companies to accommodate, while a smaller group was found to be uneconomical.

Armed with the information about the aquaculture industry in Kharkiv Oblast and the concerns and interests of the participants, the Tour Director began contacting possible host companies. The aquaculture industry in the United States, and most of Europe and the Pacific Rim, was quick to adopt the Internet as a way for diverse and widespread aquaculturists to keep in contact and informed. Utilizing the Internet and personal contacts, possible host companies were contacted that would not only meet the diverse needs of the group, since the tour group represented different sizes and backgrounds, but that also addressed the concerns and interests that the participants had expressed during the seminar in Kharkiv.

Target host companies were grouped in two general categories, commercial operations and research operations. Within each general category, more specific groups were outlined.

The commercial operations group was broken down into pond operations, low technology recirculating systems operations, high technology recirculating systems operations, and other operations. The pond operations were selected to give the Ukrainian aquaculturists a direct comparison to the way American ponds are managed and maintained, compared to the way their ponds are managed and maintained. The low technology recirculating systems operations were selected to show economically viable systems that would be possible for the Ukrainians to implement with one to three years. The high technology recirculating systems operations were selected to show the “state-of-the-art” in these high-density, high tech systems, and something that the Ukrainians could conceivably implement within five years. The other operations contacted were feed companies, public aquariums, and seafood processors and retailers, to “round out” the view of the American aquaculture industry.

The research operations were chosen for their work and efforts in the diversification of species for the aquaculturists in the region, and to show how the research organizations work with the local farmers. Because the weather and climate of Kharkiv Oblast is virtually identical to the weather and climate here in the Midwest, it did not require extensive travel to other parts of the country to show the participants other species that could be developed in their own region. Focus was placed on species currently of great interest to local aquaculturists including Freshwater Prawns, Yellow Perch, Walleye, Tilapia, Hybrid Striped Bass, Paddlefish, and Trout.

The participants were selected based on their expected ability to not only understand what they were going to be exposed to, but also by their willingness to embrace new ideas and possibly implement those ideas and concepts they were going to be exposed to during the tour.

Some of the companies selected are very large and current leaders in the Kharkiv Oblast aquaculture industry. These companies have an ability to influence the entire Oblast and even the greater region. But, due to the way the industry has developed and the way Ukrainian rayons, or counties, are managed, there were only a few large companies and many smaller ones to go through the selection process. This was by no means considered a drawback, as many smaller companies can have as large, or larger, an impact on an industry as a few larger companies.

At the completion of each study tour, CEI conducted interviews with each of the participants to discuss the program and to learn about possible benefits for the participants. It was recognized that there would be benefits in marketing, management and technology. In summary, these comments include:

1. I really liked the closed indoor recirculating systems, and I believe the future belongs to those systems. They will allow us to sell fish 12 months of the year as opposed to the current 4 months.
2. Another thing I liked a lot was the federal hatchery. That is something we could do just as well. The huge Pechenegei water reservoir is next to our farm. One thing we could start doing is to

replenish the fish reserves.

3. We are interested specifically in other fish such as rainbow trout, paddlefish (spoonfish), and shrimp.
4. With better fish feeds that contain additional protein I believe certain fish will grow at least twice as fast. At this point our food conversion is roughly 1:5. By using this new feed we will be able to get the food conversion ratio possibly to 1:2. The fish will be gaining weight much, much faster. This will mean that ultimately we will sell the fish faster, will get money faster, and will increase our profitability.
5. I was absolutely stunned with what I saw on the tour, because here I saw a number of species such as trout, paddlefish and American catfish. These are the species I have been working with my whole life.
6. The survival rate increases from 50% to 90% if we use what we saw here.
7. I am very familiar with the trout raising technology. It is very interesting for me to see the specific tricks of the trade used here, especially at the pre-hatch and the spawning and hatching stages.
8. You know that today in Kharkiv we have pretty decent supermarkets. I believe there will be some demand for all those alternative species from the restaurants.
9. It was very interesting to see your research institutions.
10. If we summarize everything, all our learnings are basically things we can do in Kharkiv.
11. During one of our last appointments at Graves County Cooperative we learned about their operation that certainly should be implemented right now in Kharkiv. It is a burning issue.

The overwhelming conclusion of these exit interviews was that the fish farms can make considerable progress if they implement many of the ideas they gained on the study tour.

3.4 Livestock Production

From August 11, 2003 to August 31, 2003, CEI led a second MTM Livestock Tour to selected host farms/companies in the US. The purpose of the tour was to continue to expose key Kharkiv, Ukraine farms to the modern methods of livestock/poultry farming, and provide a basis for making strategic improvements in the Ukraine agricultural industries. Productivity of the Kharkiv farms is about one-fifth to one-third that of US farms. The focus of the tour was on cost effective means for Kharkiv to achieve short term results while developing a more robust long-term plan for modernization. The tour's participants made up consisted of thirteen individuals from 12 agricultural farms, one individual from the local agricultural university, and one Oblast livestock official. Collectively the farms cover 32,134 hectares, and grow 10,423 cows, 2,910 swine, 1,365,000 chickens, 3,500 turkeys, and 900 sheep.

The tour visited 23 host organizations in six states and traveled than 5,000 miles. Based on the visits to the American hosts, participants projected improvements that will result in savings/revenue opportunities of 2.135 million UAH in new revenue (soy as a cash crop and increased revenue from better quality raw material), 11.294 million (adjusted for Cross-Zaria overstatement) UAH in cost savings (improved feed, storage bins with dryers, milk replacement for young livestock, waste reduction, and modernization), and 1.060 million UAH in capital expenditures (used since much of it was projected for US equipment). Areas where there are projected improvements but no costs saving projections include modernizing the waste removal system to include injection into the ground, reducing infant fatality in cows and sows, reducing the number of replacement cows needed to sustain the herd, improved equipment maintenance, and labor savings from improved/automated operations.

The biggest opportunity for increasing productivity and profitability lies in improving the feed to livestock and poultry. Depressed markets and low prices have caused many of the farms in Kharkiv to reduce the feed and supplements to livestock. This causes lower than average output, physical deterioration, and increased infant mortality. All of these problems can be reversed by improving the feed. The farms in the US rely almost entirely on the use of soy and corn. The benefits of that combination in improving output were not lost on the participants. Most participants saw the opportunity to grow soy for use as a cash crop as well as a feed base for improving animal health. Nearly all of them plan to add soy and corn as a staple for next spring's plantings.

The second area of peak interest by the entire group was the use of large storage bins (look like small metal silos) with dryers that allow US farmers to harvest, dry, and store all their own feed supply. For the average Ukraine farmer, mills typically charge about 30 UAH/ton to reduce the moisture in grain used for feed supplies. The group felt that this could be reduced to no more than 10 UAH if they could process and dry their own. The projected savings from just three companies would amount to 6.4 million UAH per year and would greatly increase the quality of the grain. None of the participants had an estimate of how much it would cost to install and operate the grain bins but the three largest are contacting American manufacturers to get price estimates.

Finally, an area that will also generate savings and improve crop yields is animal waste management. Animal waste management using injection and/or composting affords a longer term option for reducing costs. However, this will require some additional investment in machinery to accommodate the procedure. Most of the agricultural farms plan to further explore how this can be achieved through use of the technical resource center.

As demonstrated by the projected results of this tour, and the actual results of the 2001 tour, MTM tours are an excellent educational program for developing economies. They provide the impetus and the direct knowledge for business executives to build a solid competitive operation. Participants employ more personnel, pay higher wages, and significantly improve the economic climate in their region.

3.5 Agricultural Machinery

This Management, Technology and Marketing (MTM) Productivity Study Tour program for Kharkiv, Ukraine was the last of four study tours for fiscal year 2003. This report describes Tour for the agricultural equipment industry sub-sector.

The purpose of the program is to give rise to a rapid and visible increase in living standards for the Ukrainian population as a whole by introducing key Ukrainian managers in key industrial sub-sectors to modern management, technology and marketing methods in the U.S. The Center for Economic Initiatives (CEI) selected four agricultural sub-sectors (Grain; Livestock and Dairy; Aquaculture and Agricultural Machinery) in order to introduce the benefits of this Marshall Plan type technical assistance program to Ukraine. All of these sub-sectors produce products that are basic to the needs of the Ukrainian population.

The major achievements of the program for the Ukrainian companies were:

1. New and modified products were identified that can easily be added to existing lines without significant investment;
2. An awareness and appreciation of new management techniques;
3. A greater appreciation of the role of advertising, marketing, merchandising and distribution;
4. New products and equipment they can purchase from the U.S.

5. A greater openness and awareness of changes they can make in their own firms and industries.

The study tour group included 13 high-level industry participants. Under the direction of the Tour Director, the group of 13 visited 18 organizations over a five-state area. The size of the group was economically most efficient. It would have been difficult to arrange visits for a group of 20 or more, while a smaller group would have increased the cost per participant. Due to budget limitations, the tour area was restricted to Ohio, Indiana, Illinois, Iowa and Kentucky. This was quite adequate for agricultural equipment industries.

The sites visited were carefully selected to meet the diverse needs of the group. Since the tour group represented different sizes of businesses and profile, each participant visited some plants that were within their area of interest. Moreover, there was much to be learned on every visit since management, marketing and distribution were common to all.

The host company determined the length of each visit. In almost all cases, the visits were scheduled to last three hours and were planned for the morning or afternoon. At each site there was a short introduction by management followed by a tour of the facilities. A question and answer period followed. In almost all cases, this was an extremely lively session and extended far beyond the initial schedule. The U.S. hosts were extremely generous with their time and information. Were it not for the need to maintain schedules, many visits would have been significantly longer. The enthusiasm of the participants rubbed off on the host companies and many offered to host future programs.

During their stay in the U.S., the group visited various agricultural equipment manufacturing plants of various sizes. In addition, they heard lectures from experts on various subjects. A description of the individual host organizations is included in this report. As a result, the participants were able to get a very broad view of their industry.

The length of the tour, 20 days, appeared to be just about right. Time was needed for the new concepts to be fully understood and appreciated. The participants would probably not have been able to be away for a longer period of time.

Just as previous tours, when the group first arrived in the U.S., they had various fixed ideas about conducting their business. Although the participants were looking for new ideas, they were not necessarily open to new ideas. By the end of the tour, this attitude had completely changed. Most were eager to return and try out new ideas and products. The evolution in thinking was remarkable.

One of the frequently asked questions was “How do the Americans make the products at such a low cost?” Almost every host company discussed the importance of increased volume to drive down costs. This implied a greater need for effective marketing and for specialization. Both were exactly the opposite of the business thinking in Ukraine where there is little advertising and each firm struggles to diversify into as many different product lines and even different industries.

A surprising degree of bonding took place between the tour members. At the conclusion of the tour most agreed to meet again and possibly to form an association. Several participants were exploring various business arrangements; not only among themselves, but with the U.S. companies they visited.

Some of the participants expressed serious interest in American products and reproducing similar equipment back home. The Tour Consultant has agreed to facilitate communications between Ukraine and the American companies.

At the conclusion of the study tour the group was interviewed in depth to record what they had learned and to measure the potential impact of the tour on their individual firms. CEI was pleased to learn that all had concrete plans to introduce productivity improvements to reduce their costs of production, add new products to their lines and institute management changes. These findings are recorded in the Evaluation by Tour Members included in this report.

This Marshall Plan type equipment study tour was deemed a great success by all the participants and by CEI. Only by seeing for them-selves were these industry leaders able to learn new techniques and discover new products they could apply or reproduce back in their firms without the need of large new investments.

3.6 Internal Ukraine Study Tour

Thirty three managers from farms in Ukraine's Kharkiv Oblast visited Freedom Farm in Kherson Oblast and Agro-Soyuz in Dnepropetrovsk Oblast August 12-15, 2003. Freedom Farm is a successful working farm owned by two Americans and employing a staff of Ukrainians. At Freedom Farm, the group saw modern agricultural technologies in use.

Freedom Farm is located in the village of Khahovka, northeast of the city of Kherson. The farm consists of 10,000 hectares of land, leased from local residents. Freedom Farm uses the no-till method to grow wheat, corn and soybeans, enjoying a yield 2½ times that of traditional Ukrainian farms and about equal to the yield of a typical U.S. farm.

"Grains grow phenomenally well in Ukraine," says Joe Parker, president of Freedom Farm. "Freedom Farm's purpose is to show Ukrainians that they can get more out of their fertile soil. We demonstrate that they can do this by employing technologies such as no-till farming and herbicides.

The two-day visit has been arranged by Cincinnati's Center for Economic Initiatives (CEI). CEI regularly sponsors agricultural study tours, bringing groups of 16 Ukrainians each to the United States to see modern farm technology in practice. With this Internal Ukraine study tour, CEI can make a first-hand look at American farm technologies and methods available to additional Ukrainians.

3.7 Follow-up

No follow-up activities were planned for this program due to the shortness of the grant period. There was not sufficient time for significant changes to have taken place.

3.8 Summary

The major benefits of the program for the Ukrainian companies were:

- a. Numerous outstanding productivity improvements were identified that have been documented in technical reports that have been distributed in Ukraine.
- b. The participants came to a greater understanding of the role of advertising, marketing and distribution which will permit their companies to compete more effectively with imported food products and will improve the accessibility of products to low income groups;
- c. Productivity changes were made which will increase product shelf life, reduce costs and eliminate waste;
- d. Managers gained an awareness and appreciation of new management techniques;
- e. New products and equipment were identified which the Ukrainian firms can purchase from the

U.S.

- f. Ukrainian firms gained a greater awareness of changes they can make in their own firms and industries.

The host company visits, in almost all cases were scheduled to last three hours. At each site there was a short introduction by management followed by a tour of the facilities. At some companies there was an extensive lecture given by company specialists. A question and answer period followed. In almost all cases this was an extremely lively session that extended far beyond the initial schedule. The U.S. hosts were extremely generous with their time and information, even proprietary information.

Some of the participants expressed serious interest in purchasing American products and equipment. CEI will facilitate communications between the Ukrainian and American companies.

4. Overall Projected Benefits

The MTM study tour program is an adapted Marshall Plan technical assistance program for the Kharkiv region of Ukraine, run by the Center for Economic Initiatives (CEI), and is one component of the Kharkiv Partnership. This grant and its predecessor has been a seven year program consisting of 17 study tours for 280 high level managers, representing tens of thousands of workers, which targets key segments of the economy and provides critical information on management, productivity, technology and marketing.

The program has had a positive and significant impact on the Ukrainian industry. The following are a few of the noteworthy benefits. In the cases below, the study tour industry sub-sector is given in parentheses.

- Increased awareness of new agricultural methods.
 - Grain and Livestock companies learned of the benefits of low-till and no-till techniques which result in significant fuel, labor and equipment savings.
 - During the grain and livestock study tours the participants learned the significance of growing soy and corn, especially for animal feed.
- Increased profitability.

Companies that participate in the MTM program are better able to survive and expand with new competitive products and management methods. This is accomplished in spite of the fact that today in Ukraine, many companies are going out of business and jobs are being lost.
- Greater awareness of the functions of management.

This is a topic that was not formally taught to Ukrainian managers during the Soviet era and for which few have had preparation. There was great interest among the study tour members in organizational structures and in job descriptions.
- Greater understanding of marketing and distribution
 - Most participants acknowledged they had little idea of the role of marketing before participating in the CEI tours. This attitude changed significantly during all CEI tours.
 - Many participants set up marketing and sales operations upon their return to Ukraine.
 - Aggressive and innovative marketing activities are being introduced.
- Reduced government interference.

On some previous study tours, Oblast Administration officials were invited to participate and they subsequently made significant changes which helped the industry. On the four study tours under this grant, government officials were included. It was realized that Rayon officials can have a significant impact on the efficiency of agriculture.
- Increased savings in production costs.
 - Companies observed on the U.S. farms that young calves were separated from the other calves and cows immediately after birth. This greatly reduces infant mortality.
 - In the U.S. food processing plants the cooling systems were located in the plant ceilings. In Ukraine, they are located on the floor. Not only does ceiling installation save valuable floor space, but it is energy efficient. The estimated energy savings for this type of cooling are 30%. Several of the companies on the Livestock tour are making this change.

- The U.S. farmer typically grows 3 different crops and the Ukrainian farmer grows 17 crops. By reducing the number of crops the farmer does not need so many different types of equipment, different fertilizers and herbicides and skills.
- Increased management self-confidence.
Participants on the tours gain the confidence to make difficult decisions. This applies particularly to the need to reduce costs and to make difficult personnel decision.
- Create a positive image of the U.S.
 - It is very clear that the Ukrainian participants gained a very positive impression of U.S. business practices and American culture, which is in sharp contrast to the information given them in the Soviet era.
- Increased contact sources in the U.S.
CEI provides valuable follow-up information and services to Ukrainian participants in the study tour program and to other Ukrainian firms.

5. Additional Activities & Benefits

5.1 Associations

Nearly every study tour group expressed interest in forming an association. At the end of this grant period it is premature to know how successful these activities will be. CEI has encouraged that process although it cannot become directly involved.

The most notable example from previous programs is in Construction where papers have been drawn up and presented to the authorities for approval.

5.2 Networking

CEI has been asked by several of the study tour participants for some way to meet with others who had been on the tours. Networking is not a common occurrence in Ukraine. Therefore, CEI arranged a meeting where all participants from the previous study tours could meet.

The Networking Meeting of former CEI study tour participants was held at the Rosinka firm at 6:00 pm on February 6, 2003. Over 150 people had been invited and enthusiastically confirmed, but only 100 showed up due to very bad icy weather. As expected, there was a great deal of communication between participants on the same study tour and between participants on different study tours. After making a presentation of U.S. trade opportunities, Bill Penoyar of USAID talked to many participants and appeared to appreciate the event. Nikolay Yakimenko of IESC and many others later commented very favorably on the event. There was no doubt that the event was greatly appreciated by all the study tour participants.

All participants were given a copy of their study tour technical report and a CEI prepared Participants book with photos and contact information for all participants on the last 6 study tours.

5.3 Success Video

CEI contracted with a professional photographer in Kharkiv to produce a video that features ten successful study tour participants and their companies. The participants were interviewed in their office and short video clips made of their operations. The interviews were condensed and compiled into a 39 minute video. The Russian language text was translated into English and an English language version has been released. Copies were mailed to USAID/Kiev. CEI believes the video presents a very positive image of the participants and their firms and hopes it can be used in whole or in part within Ukraine to publicize U.S. government programs in the country.

6. Tour Overview

6.1 Summary

Study Tour	Participants	Employment	Organizations visited	# States visited
Grain Production	16	1,728	20	5
Aquaculture	17	467	16	3
Livestock Production	15	2,108	24	7
Agricultural Machinery	13	6,339	15	5
Total	61	10,642	75	20
Average	15	2,660	19	5

6.2 Grain Production

Area in Ukraine represented	Kharkiv
Tour Director	Belal Siddique
Tour dates	May 26 to June 15, 2003
Number of participants	16 (14 men, 2 woman)
Participant organizations	16
Workers represented	1728
Host organizations visited	20
Number of states visited	5

6.2 Aquaculture

Area in Ukraine represented	Kharkiv
Tour Director	Jeffrey Ashby
Tour dates	June 30 to July 20, 2003
Number of participants	17 (13 men, 4 woman)
Participant organizations	16
Workers represented	467
Organizations visited	12
Number of states visited	3

6.3 Livestock Production

Area in Ukraine represented	Kharkiv
Tour Director	Bruce Vaillancourt
Tour dates	August 11 to August 31, 2003
Number of participants	15 (10 men, 5 women)
Participant organizations	14
Workers represented	2180
Organizations visited	24
Number of states visited	7

6.4 Agricultural Machinery

Area in Ukraine represented	Kharkiv
Tour Director	Belal Siddique
Tour dates	September 8 to September 28, 2003
Number of participants	13 (11 men, 2 women)

Participant organizations	12
Workers represented	6339
Organizations visited	15
Number of states visited	5

7. Participant Selection Process

The following steps were followed:

- 1 The objective of the selection process is to select participants who are decision makers in their firm. They are to be from firms which can make a difference in the industry and can serve as examples for the rest of their industry.
- 2 CEI selected a business support organization to coordinate activities. In Kharkiv, Center Perspectives NGO was selected.
- 3 Perspectives announced the program in Kharkiv by placing notices in newspapers and trade journals and meeting with trade groups.
- 4 Perspectives answered questions about the program and collected applications from interested firms. Many companies were skeptical about the program since it was viewed as too good to be true and they had difficulty believing there were no strings attached. Several times CEI had to explain that CEI believed the U.S. government supported this program for several reasons. Most importantly, the U.S. wanted to develop Ukraine as a viable trading partner.
- 5 The applications were then turned over to the International Executive Service Corps (IESC).
- 6 American volunteers from IESC then contacted the applicant firms and visited as many of them as possible based on time required and resources available. Written company profiles and personal resumes were then prepared for use by CEI.
- 7 CEI representatives then visited some of the applicant companies in the selection process. The purpose was to meet the people and to learn about conditions in the industry.
- 8 The information gathered about the applicants and companies such as sex, size of firm, or number of employees was then entered into a computer spreadsheet which would later be used to rank the applicants.
- 9 Each applicant company was then graded on a scale of 1-10, 10 being the highest. A number of categories are used including growth potential and an ability to impact the economy. This is one of the main selection criteria and the figure was entered into the computer spreadsheet.
- 10 The selection seminar was then conducted. In the first part, CEI representatives presented information about the program and about business in the U.S. In the second part, CEI observed the applicants as they participated in an open discussion about the current situation in their industry.
- 11 Interview teams made up of CEI representatives then interviewed the individual applicants. Each interview lasted about 25 minutes and each applicant was then given a grade from 1-10 by each of the interviewers.
- 12 The interview grades were then entered into the spreadsheet and the interview grades averaged. The average interview grade was then added to the company grade to give a final grade.
- 13 The database was then sorted by score and the sequence reviewed. When there were two people from the same organization with a score high enough to be selected, the one with the lower score was dropped unless that person was a female. Every possible opportunity was taken to select females since USAID wanted 50% of the participants to be female. In practice this objective as impossible to meet since the number of female decision makers and applicants was limited despite every attempt by Perspectives, a woman run organization. The list was also reviewed for geographic diversity with respect to rural and urban areas. Again, adjustments were made as appropriate.

- 14 The applicants were then informed of their selection by Perspectives. There appeared to be few objections to those selected although certainly there were disappointments.
- 15 CEI was very surprised when it came time for the interviews. Although they had recently signed up for an interview time, several failed to appear. CEI suspected other influences were at work, but this was never researched.
- 16 After the applicants were notified of their selection, Perspectives assisted with Ukrainian passport and U.S. visa applications.

8. Program Schedules

8.1 Grain Production May 26-June 15, 2003

Date	Time	Destination	Contact	Purpose
5/26	6 pm	Arrival: US AIR Flt 4354, transport to Vernon Manor Hotel	Kathy Kathman Phone: 513-281-3300	Dinner/Residence
5/27	8:30 am	Orientation Seminar	CEI	Room Required
	Noon	Lunch	Kathy Kathman	Room Required
	1:30 pm	Cincinnati Tour, Kroger	Program Director	Get oriented, Get food
5/28	9 am- 12 noon	Cargill Kellogg Farm Service Center 6761 Kellogg Avenue Cincinnati, OH 45230	Richard Morland, (Manager), Dave Link (Manager), Adam Schmidt (Manager) Phone: (513) 232-8981/(800) 543-7332	Agro-Service Operation, Grain Elevator.
	2 pm- 4pm	Heyob Farms 7820 New Haven Road Harrison, OH 45030	Dennis & Mike Heyob, Owners Phone: (513) 738-1794 Fax:(513) 738-1794	Corn, Soybean and market fresh sweet corn. Farming.
5/29	9 am	Miller Farm 1557 East 300 North Portland, IN 47371	Greg Miller Phone: (260) 726-2844	Corn, Soybean, and Wheat Production. 1,800 Acres land
5/30	8 am- 10 am	Southwest Landmark (Land-O- Lakes) Feed Plant 767 Old Chillicothe Road Washington CH, OH 43160	Keith Noble, Plant Superintendent David Schultz, Plant Manager Phone: (800) 282-8524 (740) 335-0207 Fax: (740) 335-3572	Agro Service, Animal Feed, Cooperative movement.
	11 am-1 pm	Southwest Landmark Agronomy Plant 310 Starbuck Road Wilmington, OH 45177	Jim Fleck, President Phone: (800) 354-0435/(513) 932-2015 Fax: (513) 932-7955	Cooperative Agro Services, GPS etc.
	3 pm- 8 pm	Mike Farm Enterprise Inc. 2274E. Lytle 5 Point Road Dayton, OH 45458	Peggy & Mike Clark, Owners Phone: (937) 885-5965 Fax: (937) 885-5942	Sharing Corn farming experiences.
5/31	4 pm- 8 pm	Dinner/Picnic	Judy & Dan McKinney	Food/Social
6/1		Cincinnati	DAY OFF	Art Museum, Botanical Garden, Newport Aquarium
6/2	9 am- 12 noon	Schwenke Brothers Farm 4581 Beaver Road Union, KY 41091	Bob Schwenke, Owner Phone: (859) 384-3840 Fax:(859) 384-7177	Corn and Soybean Farming.
	2 pm-	ADM – Countrymark (Barge	Rick Bauwens, General	Grain

	4 pm	Operation) 4837 River Road Cincinnati, OH 45233	Manager Phone: (800) 655-4860 (513) 941-6760 Fax: (513) 941-2265	Transportation. Barge Loading Terminal Operation.
6/3	8:30 am- 10:00a m	The Ohio State University Dept. of Agricultural, Environmental & Development Economics Agricultural Admin Bld. # 103 2120 Fyffe Road Columbus, OH 43210-1067	Prof. Luther G. Tweeten Phone: (614) 292-6335 Fax:(614) 292-7710	University. Agricultural marketing, policy development and trade
	2 pm- 5 pm	Ohio Department of Agriculture (ODA) 8995 East Main Street Reynoldsburg, OH 43068-3399	Bruce Benedict; Ms. Liana Lee, Chief, Division of Markets; Betsy Belleville, International Crop Phone: (614) 752-9815 Fax: (614) 644-5017	State Agricultural Organization. State Agricultural Marketing Support System, Laboratory and Testing.
6/4	8 am- 11 am	Ohio Agricultural Research Development Center (OARDC) 1680 Madison Avenue Wooster, OH 44691	Dr. Joseph Kovach Phone: (330) 263-3846 Fax: (330) 263-3841	Agro Research Center. Integrated Pest Management (IPM).
6/5	8 am- 11 am	Beard Industries 1750 W. State Road # 28 Frankfort, IN 46041-9146	Bill Crossby, Operations Manager. Phone: (765) 654-8517 Fax: (765) 654-8510	Grain Storage and Drying technology.
	2 pm- 5 pm	Chore-Time Brock (CTB) Manufacturing 611 North Higbee Street Milford, IN 46542	Bruce Mitchell, International Sales Manager, Bill Crossby, Operations Manager. Phone: (574) 658- 5186 / (765) 654-8517 Fax:(765) 654-8510	Corrugated Grain Silos Production. Storage and Drying Technology
6/6	9 am- 10 am	Chicago Board of Trade 141 West Jackson, 5 th Floor Chicago, IL 60604	Ray Gach, Visitor Center Guide Phone: (312) 435-3500	International Mercantile Commodity and Grain Trading
6/7		Chicago	Day off	Day off
6/8		Chicago Fields Museum	Monsanto Exhibition/Travel to Moline	Plant Science
6/9	8 am- 12 noon	John Deere 1100 13 th Avenue East Moline, IL 61244	Linda Alamanza, Guest Service Department. Phone:(309) 765-8000/(877) 201-3924	Agricultural Equipment Manufacturer. Harvester Production Works.
	3 pm-	Kinze Mfg Inc.	Dolores Reinhart, Guest	Agricultural

	5pm	PO Box 806 I-80 (Exit 216, Morengo Exit) Williamsburg, IA 52361	Relations Phone: (319) 668-1300 Fax: (319) 668-1328	Equipment Manufacturing and Demonstration.
6/10	8 am- 12 noon	Pioneer Hi-Bred International Inc. 7000 North West 62 nd Avenue PO Box 1000 Johnston, IA 50131-1000	Evonn Dorr, International Guest Relations Phone: 800-247-6803 (ext. 3488) / (515) 270-3488 Fax: (515) 334-4550	Agro Service, Seed Developers. See 2 Operations related to Research, and marketing Operations.
6/11	9 am- 12 noon	MONSANTO 800 North Lindbergh Blvd St. Louis, MO 63167	Janet Bossch Manager International Business. Phone: (314) 694-5014	Genetic Engineering and Seed Operations
6/12	8:30- 10:30 am	American Soybean Association (ASA) 12125 Woodcrest Executive Drive, Suite 100 St. Louis, MO 63141 - 5009	Gay Lynn Mester, Program Assistant Phone: (314) 576-1770/800- 688-7692 extension 1323 Fax: (314) 576-2786	Soya Growers Association. Farmers Association.
6/13	8:30a m- 5:30 pm	Exit interviews	Kathy Kathman Phone: 513-281-3300	Room Required
	6:30 pm	Graduation dinner	University Club	Farewell Dinner
6/14		Cincinnati	Day off	Day off
6/15	3 pm	Departure (6:15 pm): US AIR Flt 4142, transport by Vernon Manor Hotel	Kathy Kathman Phone: 513-281-3300	Departure

8.2 Aquaculture June 30 - July 20, 2003

Date	Time	Destination	Contact	Purpose
6/30	2:46 pm	Arrival: (2:46 pm) Delta 1997 from New York	Kathy Kathman Phone: 513-281-3300	Dinner/Residence
7/1	8:30 am	Orientation Seminar	CEI, Tour Director	Room at VM required
	Noon	Lunch	Kathy Kathman	Vernon Manor
	1:30 pm	Cincinnati Tour, Kroger	Program Director	Get oriented, food
		Vernon Manor	513-281-3300	Residence
7/2	10 - 2 pm	Freshwater Farms of Ohio 2624 North U.S. Hwy 68 Urbana, OH 43078 (Lunch provided)	Dr. Dave Smith 937-652-3701	Indoor recirculating systems
		Vernon Manor	513-281-3300	Residence
7/3	11 - 4 pm	Freedom Feeds 1000 S. Edgewood Ave. Urbana, OH 43078	Steve Massie 937-484-3682	Quality fish feed.
		Vernon Manor	513-281-3300	Residence
7/4	11:00 am	Jones Fish Hatchery 3433 Church Street Newtown, OH 45244	Tour Director 513-561-2615	Outdoor ponds, with packing and shipping facilities.
	12:00 noon	Bounty Seafood 6675 Salem Rd. Cincinnati, OH 45230	Kevin Smith, owner 513-232-5959	Specialty seafood shop with specialty marketing. Examination of live lobsters.
	2:00 pm	Forest Hills Kroger 7545 Beechmont Ave. Cincinnati, OH 45255	513-232-4411	Supermarket seafood department. Display. Packaging.
		Vernon Manor	513-281-3300	Residence
7/5	Free Day	Vernon Manor	513-281-3300	Residence
7/6	Free Day	Vernon Manor	513-281-3300	Residence
7/7	12:00 noon	Advanced Aquacultural Technologies PO Box 426 Syracuse, IN 46567	Gary Miller 547-457-5802	Operating a closed system facility for striped bass.
		Fairfield Inn Ft. Wayne, IN	Tel & Fax: 260-489-0050	Residence
7/8	10:00 am	Purdue University 195 Marsteller Street West Lafayette, IN 47907-2033	Paul Brown West Lafayette, IN 765-494-4968	Research facilities for trout and salmon.
		Fairfield Inn - Carleton 8325 Bash Road	Tel & Fax: 317-577-0455	Residence

		Indianapolis, IN 46250		
7/9	11:00 am	Ohio State University South Centers 1864 Shyville Road Piketon, OH 45661-9749	Laura Tiu Tel: 740-289-4591; 800-297-2072 (Ohio only) Fax: 740-289-4591 tiu@osu.edu	Lecture on status of aquaculture and tour of facilities.
		Vernon Manor	513-281-3300	Residence
7/10	10:00 am	Moreland's Shrimp Farm 370 Hornbeek Road Butler, KY 41006	Dan Moreland 859-472-2622	Cancelled due to impassible entrance road
	2:00 pm	Mill Creek Restoration project	Charlie Wallner, CEI	A look at government and local environmental issues.
		Vernon Manor	513-281-3300	Residence
7/11	10:00 am	Newport Aquarium One Aquarium Way Newport, KY 41071	Peggy Sparks 859-261-7444	A behind-the-scenes look at holding and circulation technologies, with biologists.
	2:00 pm	Marketing presentation	Ed Watson, CEI	
		Vernon Manor	513-281-3300	Residence
7/12	4:00 pm	CEI Picnic	Dan McKinney, CEI	Interaction with CEI members.
		Vernon Manor	513-281-3300	Residence
7/13	12:00	Leave for Somerset, KY		
		Comfort Inn, Somerset 82 Jolin Drive Somerset, KY 42503	Tel: 6060677-1500 Fax: 606-677-0709	Residence
7/14	10:00 am	Wolf Creek National Fish Hatchery, 50 Kendall Road Jamestown, KY 42629	James Gray Jamestown, KY 270-343-3797	Rearing trout in outdoor raceways.
		Best Western Parkside 80 Chenault Drive Frankfort, KY 40601	Tel & Fax: 502-695-6111	Residence
7/15	9:00 am	Kentucky State University Aquaculture Research Center 103 Athletic Road Frankfort, KY 40601	Dr. Steve Mims Frankfort, KY 502-597-8110	Overview presentation of Kentucky aquaculture
		Holiday Inn Bardstown Road Louisville, KY	Tel: 502-454-0451 Fax: 502-456-0995	Residence
7/16	10:00 am	Shuckman's Fish Company & Smokery 3001 W. Main Street	Lewis Schuckman Louisville, KY 502-775-6478	Specialty seafood processor. Refrigeration

		Louisville, KY 40212		and smoking technologies. Packs paddlefish caviar.
		Hampton Inn, Kuttawa 62 Days Inn Drive Kuttawa, KY 42055	Tel: 270-388-5777 Fax: 270-388-0509	Residence
7/17	8:30 am	Purchase Area Aquaculture Cooperative 11526 State Rt. 97 Tri City, KY 42040	Dan Bonk, Marketing Director Tri City, KY 270-382-3100	Catfish growing cooperative of several dozen farmers sharing one processing facility.
	10:30 am	Murdock Farm Tri City, KY 42040	John Murdock Tri City, KY	Tour his 8-pond catfish farm, discussing feed, conditions, etc.
		Vernon Manor	513-281-3300	Residence
7/18	10:30 am	Jungle Jim's Market 5440 Dixie Highway Fairfield, OH 45014	513-674-6000	Marketing, live holding technologies
	6:30 pm	Final Dinner	University Club Cincinnati, OH	Interaction with CEI members. Distribute certificates.
		Vernon Manor	513-281-3300	Residence
7/19	8:00 am	Exit interviews	Lee Cole, Bruce Vaillancourt	
		Vernon Manor	513-281-3300	Residence
7/20	9:00 am	Exit interviews	Lee Cole, Bruce Vaillancourt	
	4:00 pm	Depart hotel for airport		
	6:55 pm	Delta flight 44 departs		

8.3 Livestock Production, August 2003

Date	Time	Destination	Contact	Purpose
8/11	3:10 PM	Arrival, (DL 49) transport to Vernon Manor, 400 Oak Street Cincinnati, OH 45219	Kathy Kathman 513.281.3300 Fax: 513.281.8933	Welcome Dinner
8/11		Vernon Manor	513-281-3300	Residence
8/12	8:30 AM	Vernon Manor	Lee Cole Bruce Vaillancourt Jim Titus	Orientation
8/12	12:30 PM	Vernon Manor	Kathy Kathman	Lunch
8/12	2:00 PM	Downtown Cincinnati	Vaillancourt/Sasha Etlin	Cultural exchange
8/12		Vernon Manor	513-281-3300	Residence
8/13	8:00 AM	Hesselbrock Farm (Tim) 6020 Cincinnati- Brookville Road Okeana, OH 45053	Steve Bartels (Butler Co.) 513-887-3722 Greg Meyer (Warren Co.) 513-932-1891	OSU Extension Services – Support and US Farm Programs
8/13	1:30 PM	Tewes Poultry Farm 2801 Crescent Springs Erlanger, KY 41018	Darlene Tewes 859-341-8844	Turkey Farming
8/13		Vernon Manor	513-281-3300	Residence
8/14	9:00 AM	University of Kentucky Agricultural Science Building, (corner Cooper Drive and S. Limestone [Barnhart Bldg.] Lexington, KY 40546	Will Snell wsnell@uky.edu	Farm Business Management
8/14	1:30 PM	Kentucky State Fair 937 Phillips Lane Louisville, KY 40209	James Titus 513-535-1899 Media & Public Relations 502-367-5180	Agricultural promotions & livestock breeding
8/14		Vernon Manor	513-281-3300	Residence
8/15	6:00 AM	Depart for Chicago		
8/15	11:00 AM	Chicago Mercantile Exchange 30 South Wacker Chicago, IL 60606	Diana Anacker 312-930-2390 800-331-3332 damacker@cme.com	Mercantile operations and commodity trading
8/15	7:00 PM	Depart for Green Bay, WI		
8/15		Fairfield Inn 2850 S. Oneida St. Green Bay, WI	Roger Sharp Diane 920-497-1010	Residence Oneida/Waubee exit off 41
8/16	8:00 AM	Knigge Farm 4577 Poygan Ave. Omro, WI 54963	Pete Knigge Owner 920-685-5895	The future of dairy farming. Robot milking and waste disposal

8/16	3:00 PM	Mehagan Farm 13864 Lloyd Rd. Genoa, IL 60135	Pat & Gilby Mehagan 815-895-8588 oldcrows@tdc.net	Modern pork farming techniques
8/16		Mariott Courtyard 1930 Lincolnway E. Goshen, IN	Danielle 219-534-3133	Residence
8/17	1:30 PM	Yellow Creek Farm 25202 County Road 36 Goshen, IN 46526	Truman Weaver Owner 574-875-5664 etweaver@maplenet.net	Typical American farm but Guernsey's instead of Holsteins. Oldest Pure bred Guernsey herd in US
8/17		Mariott Courtyard 1930 Lincolnway E. Goshen, IN	Danielle 219-534-3133	Residence
8/18	1:30 PM	Michigan Milk Producers Association 41310 Bridge Street Novi, MI 48376	John Dilland General Manager 248-474-6672 Fax 248-474-0924	Operation and benefit of a cooperative
8/18		Mariott McKinley Grand 320 Market Ave. South Canton, OH 44702	Rosanna Neff All Rooms - \$69.00 330-454-5000 Fax: 330-454-5090	Residence
8/19	8:00 AM	Park Farms 1925 30 th Street NE Canton, OH 44705	Carol Capocci Public Relations Director 800-683-6511 330-455-0241X3115 sales@parkfarms.com	Full poultry operations – Egg – to-Table
8/19	2:00 PM	OARDC 1680 Madison Ave. Wooster, OH 44691	Dr. Harold Keener Mary Wicks 330-202-3533 Fax 330-263-3670 Wicks.14@osu.edu	Manure and composting management
8/19		Residence Inn 2084 S. Hamilton Rd. Columbus, OH 43232	Tony Ruffin William Marshall 614-864-8844	Residence
8/20	9:00 AM	Ohio Dept. of Agriculture 8995 E. Main St. Reynoldsburg, OH 43068	Bruce Benedict 614-466-2732	Support for agribusiness from State Lab operations
8/20	2:30 PM	Ohio Pork Industry Center 122 Animal Science 2029 Fyffe Rd. Columbus, OH 43210	Dr. Don Levis 800-398-7675 614-292-1351 levis.7@osu.edu	Solutions to excess supply and operational improvements required during low consumer use
8/20		Vernon Manor	513-281-3300	Residence
8/21	8:30 AM	Mohrfield Farms	Larry Mohrfield	Top breed Holsteins

		10279 State Rt. 132 Pleasant Plain, OH 45162	Dan Coopman Owner 513-877-2300 Fax: 513-877-2304 mohrfieldholsteins@mohrfieldholsteins.com	and marketing
8/21	1:30 PM	Cowan Lake State Park 729 Beechwood Road Wilmington, OH 45177	Park Ranger 937-289-2105	Mid-tour Review
8/21		Vernon Manor	513-281-3300	Residence
8/22	8:30 AM	Mullins Farm 7938 Hamilton Scipio Rd (State Rte. 129) Okeana, OH 45053	Tim & Amy Mullins 513-756-9305	“Typical” American dairy farm operations
8/22	2:00 PM	Greenacres 8255 Spooky Hollow Rd. Cincinnati, OH 45242	Carter Randolph Exec. Vice President 513-891-4227 (Patty)	Organic farming techniques to reduce cost & increase yield
8/22		Vernon Manor	513-281-3300	Residence
8/23	4:00 PM	Vaillancourt’s 4561 English Creek Cincinnati, OH 45245	Bruce Vaillancourt 513-752-0069	An American home cooked dinner Cultural exchange
8/23		Vernon Manor	513-281-3300	Residence
8/24	4:00 PM	Depart for Decatur, IL		
8/24		Country Inn & Suites 5150 Hickory Point Rd. Decatur, IL 62526	Julie (no confirmation needed)	Residence
8/25	9:00 AM	Archer Daniels Midland 4666 Fairies Parkway Decatur, IL 62526	Tony Delio Debi Conner 800-637-5843 debi_conner@admworld.com	Use of soy in feeds and maximizing yields/time to market
8/25	2:00 PM	Purina Mills 100 Danforth Dr. Gray Summit, MO 63039	Larry Woolweaver Sharon Wilson 800-227-8941 314-768-4100 (636)742.0103 X- 6103 Fax 314-768-4894	Current research in improved feed and herd planning (Rosie)
8/25		Vernon Manor	513-281-3300	Residence
8/26	9:00AM	Mt. Healthy Hatchery 9839 Winton Road Mt. Healthy, OH 45231	Rob O’Hara Owner 513-521-6900 Fax: 513-521-6902	Incubation, Distribution, and Marketing
8/26	2:00 PM	Bayes Purebreds Animal Science Bldg. 2129 Fyffe Rd. OSU	Michael Bayes 614-877-2202 bayes.7@osu.edu	Association functions and support (Nat’l Pork Board)

8/26		Holiday Inn Express 2826 US 41 North Henderson, KY 42470		Residence
8/27	9:00 AM	Tyson Foods 14660 US Hwy 41 S. Roberds, KY 42452	Richard Dutton Plant Manager 270-521-3021 Richard.Dutton@tyson.com	Poultry processing from US largest retailer
8/27		Vernon Manor	513-281-3300	Residence
8/28	9:00 AM	Glencarin Farm 2142 Hathaway Union, KY 41092	Bruce Furgeson Owner 859-384-3539	Beef cattle operations
8/28	1:00 PM	Kentucky Horse Park 4089 Iron Works Pkwy Lexington, KY 40511	James Titus 513-535-1899 Park (800-678-8813)	Equine care and handling
8/28		Vernon Manor	513-281-3300	Residence
8/29	11:30 AM	Vernon Manor	Bruce Vaillancourt, Lee Cole, Jim Titus	Exit Interviews Free day
8/29	6:30 PM	University Club	Lee Cole	Farwell Dinner
8/29		Vernon Manor	513-281-3300	Residence
8/30	8:00 AM	Vernon Manor	Bruce Vaillancourt, Lee Cole, Jim Titus	Exit Interviews Free day
8/30		Vernon Manor	513-281-3300	Residence
8/31	7:15 PM	Transport to Airport, Depart for Ukraine Flight Delta 48	Kathy Kathman 513-281-3300	

8.4 Agricultural Machinery, September 8 – 28, 2003

Date	Time	Destination	Contact	Purpose
9/8	7:40 pm	Arrive DL 957, transport to Vernon Manor Hotel	Kathy Kathman Phone: 513-281-3300	Dinner/Residence
9/9	8:30 am	Orientation	Tour Director	Room Required
	Noon	Lunch	Kathy Kathman	Room Required
	1:30	Cincinnati Tour, Kroger	Tour Director	Get oriented, Get food
9/10	9am-12 noon	RA Jones, Inc. 2701 Crescent Spring Road Covington, KY 41017	Ms. Paula Holmes, Director of Marketing and Wilma Jackson, Assistant Phone: (859) 341-0400 Fax: (859) 341-0519	Sophisticated Food Packaging Machinery Manufacturer/Supplier
	2 pm- 4 pm	La Rosa Pizza 5008 Gray Road Cincinnati, OH 45232	Greg Gavin, Plant Manager Phone: (513) 542-1378/347-5670	Frozen Pizza Production. Commercial Rotary Freezing Technology.
9/11	8:30am-12noon	Cincinnati Incorporated 7420 Kilby Road Harrison Township Hamilton City, OH 45030 PM: Travel to Germantown, OH	Troy Robinson, International Marketing Manager Phone: (513) 367-7100/367-7505	Machine Building
9/12	9am-11am	The Dupps Company P. O. Box 189 548 North Cherry Street Germantown, OH 45327-1108	Jack Risner, Sales Engineer John A. Dupps, President, Phone: (937) 855-6555 Fax: (937) 855-6554	Evaporation Systems/Process industry equipment. Various metal processing facilities.
9/13	4pm-6pm	Planet Products Corp. 4200 Malsbary Road Cincinnati, OH 45242	Dr. Carter Randolph, Chairman and CEO Phone: (513) 984-5544 x 141 Fax: (513) 984-5580	High-tech machines building operations for Food Packaging Industries.
9/14		Cincinnati PM: Travel to Peoria, IL	Day off	Day off
9/15	7:30am-12noon	Caterpillar Inc. 100 North East Adam Street Peoria, IL 61629-6130	Paula Douglas, Robert Farquharson, Customer Programs Consultant (US & International) Phone: (309) 675-5347	Engine making and others.
9/16	8am-12noon	John Deere 1100 13 th Avenue East Moline, IL 61244	Linda Alamanza, Guest Service Department Phone: (309) 765-8000/(877) 201-3924	Agricultural Equipment Manufacturing Operation related to Seeder and Harvester Works.
	3pm-5pm	Kinze Mfg Inc. PO Box 806 I-80 (Exit 216, Morengo	Dolores Reinhart, Guest Relations Phone: (319) 668-1300	Agricultural Equipment Manufacturing and Demonstration.

		Exit) Williamsburg, IA 52361	Fax: (319) 668-1328	
9/17	8am-11noon	Vermeer Manufacturing Company PO Box 200 Pella, IA 50219	Brenda Kelderman, Manager Corporate Events Jodi Devries, Global Pavilion Administrator, Robert Vermeer, Chairman/CEO; Mary Andringa, President/COO Phone: (641) 628-3141	Manufacturer of balers, stump cutters, chippers, trenching equipment, directional boring and contract manufacturing.
9/18	8:30am-12noon	Caterpillar Inc. (Wheel Loader & Excavator Division) Caterpillar Drive (Off Orchard Road) Aurora, IL 60507	Jennifer Ramey, Assistant and Dean Caho, HR Manager Phone: (630) 859-4725/859- 5579 Fax: (630) 465-6346	Excavators, Loaders and Compactors.
9/19	9am-12noon	CM Associates, Inc. 18535 W. Creek Drive Tinley Park, IL 60477	Bud Gray, General Manager, Scott Janis, Operations Manager Phone: (708) 633-1166 / Cell (630) 308-7396 Fax: (708) 633-1168	High-end Appliance Finishing. Various product finishing and plating technique
9/20		Chicago	Day off	Day off
9/21		Chicago PM: Travel to Frankfort, IN	Day off	Day off
9/22	8 am-11 am	Beard Industries 1750 W. State Road # 28 Frankfort, IN 46041-9146	Bill Crossby, Operations Manager Phone: (765) 654-8517 Fax: (765) 654-8510	Grain Drying Equipment Production. Storage and Drying Technology
9/23	8am-12noon	Chore-Time Brock (CTB) Manufacturing 611 North Higbee Street Milford, IN 46542	Bruce Mitchell, International Sales Manager Phone: (574) 658- 5186/(765) 654-8517 Fax: (765) 654-8510	Corrugated Grain Silos Production, Storage and Drying Technology
9/24	8am-12 noon	Stein Associates (FMC Affiliate) 1622 First Street Sandusky, OH 44870	Peter Lilejegren, Manager International Business, Liz Sargent Phone: (419) 626-0304 Fax: (419) 626-9560	Onion Ring & Breaded Mushroom Machines. High-speed water jet Meat Cutting machines.
9/25	9am-12 noon	Toyota Motor Manufacturing North America 1001 Cherry Blossom Way Georgetown KY 40324-5700	William Taylor, Special Tours Phone: (502) 868-3025	Ultra-Modern Car Manufacturing Operation using Kaizen. Fully automatic robotics and plant visit.
9/26	8:30am-5:30pm	Exit Interview	Kathy Kathman Phone: 513-281-3300	Room Allocation
	6:30pm-	Graduation Dinner		

	9pm			
9/27		Cincinnati	Day off	Day off
9/28	12 noon	Depart Hotel for Airport	Kathy Kathman Phone: 513-281-3300	Return flight via Newark: Flt DL-478 (2:40pm)

9. Participants

9.1 Grain Production

Participants

<u>Name</u>	<u>Organization</u>	<u>Position</u>
Lyudmyla Berlova	Dept. of Agriculture	Marketing Policy Mgr
Valeriy Chmut	Kharkiv Commodity Exchange	Auctioneer
Oleksandr Kontsevych	OKA Farm	Head
Viktor Kostenko	Dept of Agriculture	Department Head
Viktor Lukotskyy	Zhelezniak Farm	Chairman
Oleksiy Piven	Ukraine Agr	Director
Sergiy Popov	Institute of Yurieva	Department Head
Nataliya Savchenko	Svitanok LTD Farm	Director
Viktor Severyn	Novy Shliakh Ltd	Agronomist
Anatoliy Synelnyk	Rossolova Farm	Chairman
Yuriy Umrikhin	Umrikhina Farm	Head
Sergiy Vasenin	Promin	Deputy Chairman
Sergiy Vdovenko	Pavlovo SABC	Director
Valeriy Vertsun	Zolotaya Niva Ltd.	Director
Mykola Zasukha	Pervoye Maya Ltd	Director

Tour Director

Belal Siddique

Interpreters

Sasha Etlin

Belal Siddique

Group Leader

Viktor Kostenko

Technical Writer

Lyudmyla Berlova

Nataliya Savchenko

9.2 Aquaculture

Participants

<u>Name</u>	<u>Organization</u>	<u>Position</u>
Roman Babenko	Neptun Ltd.	Director
Mykola Bez Korsy	Novovodolazhsky Fish Farm	Director
Oleksiy Chernenko	Regional Administration	President
Yuriy Golub	Scientific Production Center	Director
Lubov Izotova	Lyubava Fish Farm	Owner
Zinayida Kaverzina	Vesele Farm	Owner
Viktor Klyotz	Entrepreneur	Owner
Yuriy Kryvosheya	Bohodukhiv Agro-Fish Coop	Chairman
Mykhaylo Len	Krasny Oskol Fish Farm	Owner
Oleg Lushchyk	Ukrainian Eastern Fish Co.	Chairman
Yuriy Merson	Pechenegei Fish Farm	Director
Igor Misevra	Niva Farm	Manager

Iryna Pyenkina	Kharkiv Oblast Intl Dept.	Volunteer
Gennady Ryanskyy	Izyum Fish Enterprise	Director
Andriy Rybakov	Private Entrepreneur	Director
Antonina Slobodchuk	Pechenegei Fish Farm	Deputy Director
Volodymyr Yesakov	Kharkiv Vodproyekt Institute	Chairman

Tour Director

Jeffrey Ashby

Interpreters

Alexander Etlin

Iryna Pyenkina

Group Leader

Yuriy Merson

Technical Writer

Volodymyr Yesakov

9.3 Livestock Production

Participants

<u>Name</u>	<u>Organization (#)</u>	<u>Position</u>
Yevgeniy Darmo	Zlagoda (29-1)	Director (different person)
Mykola Goroshko	Staroverovsky Poultry Farm (10)	Director
Oleksiy Grygoryev	Krug (11)	Chairman of the Board
Mykola Kosov	Ukrainian Dept Agriculture (14)	Jr. Scientific Officer
Olena Kulyk	Oblast Dept. of Agriculture (33)	Chief Livestock
Valeriy Kulyk	Cross-Zaria (16)	Vice Director Production
Sergiy Marakhovskyy	Verbovskoe (18-1)	Vice Chairman
Oleksandr Pakhomov	Solonenske (20)	Chief Veterinarian
Lyudmyla Pelykh	Rodyna (21)	Chief Livestock Specialist
Vadym Plotnyk	Prometey (32)	General Director
Olena Poberiy	Verbovskoe (18-2)	Chief Accountant
Andriy Rovchak	Vostok (23)	Chairman
Tetyana Rubizhanska	Rassvet (24)	Deputy Farmer
Yuriy Ryabokon	Agroimpex (31)	Director
Valentyna Teliga	Chepil (25)	Chief Livestock Technician

Tour Director

Bruce Vaillancourt

Interpreters

Alexander (Sasha) Etlin

Tetyana Pakharenko

Group Leader

Andriy Rovchak

Technical Writer

Mykola Kosov

9.4 Agricultural Machinery

Participants

<u>Name</u>	<u>Organization</u>	<u>Position</u>
Kostyantyn Avramenko	Fasma	Vice-Director
Sergiy Bezborodov	TFQ	Deputy Technical Director
Roman Chefranov	Ukoopsnabmash	Marketing Head
Sergiy Danilov	Universal-Komplekt	Chairman
Nadiya Gikovata	UkrAgroService	Commercial Director
Sergiy Ivanenko	Gidroservice	Director
Vitaliy Korostil	Tractor Plant	Chief Engineer
Volodymyr Pyrozhkov	Alver	Director
Mykhaylo Shapiro	TFQ	Director
Mykola Tomilko	Zmiyevskoy Machine	Vice-Head Prod Dept
Sergiy Yakovlev	Busol	Marketing Director
Yuliya Zolotaryova	Vostok	Specialist-Analyst
Mykhaylo Zubko	Izumytsky Repair & Transportation	Chairman

Tour Director

Belal Siddique

Interpreters

Alexander (Sasha) Etlin

Belal Siddique

Group Leader

Vitaliy Korostil

Technical Writers

Nadiya Gikovata

Yuliya Zolotaryova

9.5 Internal Study Tour

Participants

<u>Name</u>	<u>Organization</u>	<u>Position</u>	<u>District</u>
Babenko Oleksiy	Kolos	Director	Bogodukhovsky
Belimenko Yevgen	Ag. Coord. Service	Deputy Director	Kharkiv
Belinskiy Viktor	Alfa	Director	Zolochevsky
Vatitenko Valentyna	Dolina	Deputy Director	Peresechnoe
Druzhynin Valeriy	Viola	Director	Borova
Dyachenko Fedir	Zhuravushka	Director	Merefa
Zhak Eduard	Terra	Director	Dergachevsky
Zhydkova Yevgeniya	Zhydkova	Director	Pervomajsky
Zaika Sergiy	Druzhba	Director	Izumytsky
Zayarny Oleksandr	Nove Zhittya	Agronomist-mgr.	Novovodolazchsky
Zazekalo Yuriy	Sojuz	Director	Bogodukhov
Zymnytsky Valentyn	Lipetsk PNI	Director	Liptsy
Zymnytsky Dmytro	Lipetsk PNI	Agronomist	Liptsy
Ignatenko Yuriy	Izvestiya	Deputy-director	Bliznyukovsky

Karaptan Sergiy	Morozovskoe	Director	Kegichevsky
Kolesnyk Mykola	Promin Ltd	Director	Zolochevsky
Kostyan Pavlo	Artelnoe	Agronomist	Lozovsky
Kofan Oleg	Sodruzhestvo assn.	Director	Pervomajsky
Kravchenko Nataliya	Kravchenko	Director	Kupyansk
Kuzmenko Grygoriy	Oblast administration	Dept. Chief	Kharkiv
Laznev Yevgen	Laznev	Director	Novovodolazchsky
Litovchenko Galyna	Parchomovskoe	Main	Krasnokutsky
Lyashenko Ivan	Kravchenko	Deputy-director	Kupyansk
Peresada Galyna	Schans	Director	Krasnodarsky
Rogulya Oleksandr	Kolos	Chief Agronomist	Kharkivsky
Sachuk A.V.	Slobozhanske	Chief Agronomist	Kolomaksky
Spornik Svetlana	Ruslan	Director	Izumsky
Tatarenkov Volodymyr	Kievska Russia	Director	Pervomaysky
Tyslenko Igor	Dept. Agriculture	Chief Agronomist	Kharkiv
Fedyuk Liliya	Liliya	Director	Shevchenkovsky
Kholod Tetyana	Nadezhda	Chief Economist	Kegichevsky
Chislov Stanislav	Liman-sich	Engineer	Volchansk
Chislova Galyna	Liman-sich	Deputy-Director	Volchansk
Tour Director	None		
Interpreters	None		
Group Leader	None		
Technical Writer	None		

10. Tour Logistics

10.1 Introduction

CEI had responsibility for all logistics for the study tour program. This was handled by the Tour Directors and Project Manager.

10.2 Visas

Visas were provided for all the participants, except interpreters, through the Academy for Educational Development (AED) in Washington and Kiev. New U.S. government regulations have greatly increased the time necessary to obtain visas. Fortunately, no study tour was delayed or postponed for this reason, although some groups received their visas only a few days before departure.

10.3 Passports

In order to travel to the US, all Ukrainians were required by their government to have new Ukrainian passports since they were no longer permitted to travel on Soviet passports, as had been the case before 1998. The new passports presented a new challenge for the program organizers since the spellings of all names had to be in Ukrainian and these were different from the Russian spelling of their names. Not even the individuals knew the spelling of their own names until they received their new passports. The situation became complicated for the program logistics since the names on the passport, visa, and air tickets all had to be identical.

10.4 Travel in Ukraine

The participants were all responsible for their own transportation within Ukraine. This also required them to travel to Kiev prior to their early morning departure from the Kiev Borispol airport. At least one group went by night coach directly to the airport in Kiev.

10.5 Air travel to the USA

Travel to the US was via US flag air carriers except for the flights in and out of Kiev. The tickets were purchased by CEI in the US from Delta Airlines and USAir and sent to Ukraine by courier. No layovers were required.

10.6 Travel within the USA

Within the US, all travel was by chartered bus. Several bus companies were asked to quote and the contract was eventually awarded to J & J Stage Lines. They were very accommodating to last minute changes, which were unfortunately necessary.

The overall plan was for the tours to be in the Cincinnati area during the first and last weeks of the tour. Longer trips were scheduled for the middle of the tour, but always trying to keep the number of overnights to a minimum. The coaches themselves seated 45 and had their own toilet facilities, worktables and VCR. The drivers were quite satisfactory.

From the travel point of view, the greatest problem was with the itinerary, which was arranged by the Tour Directors. The Tour Directors in turn often had difficulty finalizing the schedules. Companies were slow to commit to the program or even reversed their decision to host a tour based on various considerations, not the least of which was their concern about their FDA inspector.

10.7 Accommodations

The tour groups were housed in hotels through the tour. The Vernon Manor was selected in Cincinnati due to the price, facilities, services, location and the availability of free local transportation. Breakfast was

included in the room price. There were also food stores and fast food restaurants within walking distance. Two tour members were assigned to a room, with the participants being able to select a roommate of the same sex.

Most lectures were given at the hotel which had convenient parking. The only drawback was that the hotel was not in the downtown area. Nevertheless, the tour members came to regard the Vernon Manor as their home away from home.

10.8 Meals

The program budget provided \$35.00 per day for meals and incidentals. CEI decided that this amount should be subdivided \$10 for breakfast, \$10 for lunch and \$15 for dinner. The amount for incidentals was included in these meal amounts.

The basic plan was for the participants to be provided with cash for all meals except those that were provided by CEI. For example, each breakfast at the Vernon Manor hotel was included in the price of the room. Therefore, no cash was provided for that meal.

At the beginning of the tour, the participants were given an overall schedule of the amounts that would be provided. Then, once or twice during the tour each participant was provided with his or her cash allowance for a designated period. They were also asked to sign a receipt for this amount.

10.9 Interpreters

Interpreters were provided by CEI and were hired in Kharkiv and Cincinnati. All interpreters conformed to U.S. labor laws.

10.10 Technical Report

For all study tours, one or two participants were given the task of preparing the Technical Report, in Russian, from notes written by the participants. The reports in Kharkiv were then published by Perspectives.

11. Exit interviews of Tour Participants

11.1 Grain Production Study Tour

11.1.1 Yuriy Umrikhin, Umrikhina Farm

The first thing I will try to implement in my operations is a grain storage facility. I will either try to start manufacturing grain bins or to buy them somewhere. We will have to find out what will be more financially realistic. I also liked grain dryers. The reason why I became so interested in grain bins and grain dryers is that in Ukraine wheat production is becoming ever more risk. That is why I believe it is important to expand the list of crops we cultivate by adding corn and soy. But these two crops in our conditions do not mature with the required level of dryness, so that means that at harvest time they are still pretty moist and they required drying.

Normally we harvest the soy with 22% moisture content, but the best moisture condition for soy is 13%.

Another reason why we need grain storage facilities and grain dryers is that the current network of elevators is not working very efficiently. They have a number of problems with them of a different nature. So I can see that it would be very advantageous for us to store grain waiting for the most advantageous prices.

I believe the economic impact would be very high because now, when we turn in our grain to the elevators, we lose up to 30% of our grain because of their insufficient methods of drying, processing, and outward cheating.

Another reason why we need to convert to growing more corn and soy is that a number of people in the villages and rural areas are looking for something to do. They have been freed from their former occupations and now they are trying to raise livestock on their own which means that there will be more and more demand for both corn and soybean meal to be used as feed for those animals.

Last year we cultivated soy but because the soy was too moist, the seeds we obtained were not adequate and the germination rate of those seeds was not 50%. So we were not able to use them this year. Last fall the weather was too moist and we could not dry the soy in our present facilities. We had about 5 tons of soy and none of those grain storage plants was willing to take it for drying. Since there was so little soy, no one wanted to deal with that small amount.

Actually there is a market demand for soy in Ukraine, and it is pretty high. The only thing is that we need varieties of soy that will be early maturing. That is, that will mature quickly. Now we get those seeds from breeder farms and there is a breeder farm close to the town of Dergachi in the Kharkiv oblast.

Here in the U.S. I know there is seed that is genetically modified technology for both corn and soy. And I became convinced here that resisting those new technologies is senseless because this technology has been proven to be economically efficiently and it also makes sense.

There are probably economic and political reasons for the stance of the European Union and most probably they are trying to protect their market as opposed to being unsure of those GM foods.

The thing is that I am pretty sure of is that using Roundup Ready seeds will allow us to get the same yields we are getting now using conventional tillage, but will reduce costs tremendously and also preserve the soil.

We are not allowed to use Roundup Ready seeds yet. I hope that this situation will change. I believe that this technology is more important in our country than in the United States because we have a lot of drought and certainly do not get enough moisture and because of this low moisture level and dry weather we lose a lot of our harvest.

I also liked the mechanism of livestock breeding where the farmer gets a certain number of calves, or piglets, to raise as well as feed from the company on a contractual basis and gets paid either in cash or

by a commission or certain percentage of the selling price. I believe that is something that will work very well in our country.

In the United States there is now a widely used practice of giving piglets or calves to a farmer with a full package of shots, special food, and necessary ingredients. Then all the farmer has to do is to put up a shed and raise the animals. One farmer in the U.S. can handle 1,000 piglets using this technique. The benefits are great. For the very large operations there is a huge ecological problem with waste disposal. But if you spread the animal operations out over the country into small operations, then you don't have that same problem. Moreover, with this technique, all the farmer has to do is to fatten the animals. After the animals achieve a certain weight, they are sold.

So this operation can be done in two ways. In the first, the farmer owns the pigs, and after raising the pigs the farmer sells the pigs. In the second, the farmer gets a commission for his service. In that way the farmer does not have a problem of marketing, does not have an ecological problem, and does not have to hire a veterinarian or anyone else. It is all done very efficiently. Essentially the large farm is subcontracting the growing of the animals. The only difference is that the company is providing all the help and materials.

Certainly if you have a shepherd in Ukraine watching one cow, which is not an unusual sight, that person can watch many cows at no increase in time or expense. When I see somebody tending one cow in Ukraine, I say that you can always grow wheat in a flower pot and the results could be very similar.

Subcontracting the feeding of livestock will allow us to solve several problems. One of them is the use of low-quality wheat and barley which actually can only be sold at very low prices, but from the nutrition point of view it is pretty good.

And a second reason for using this method is increasing employment. Of course that will have not only economical but political significance. I sit on our Rayon Council so I understand that it is important politically as well.

Also, increasing livestock production will entail increased demands for hay or perennial grasses. For us, using perennial grasses will improve the soil structure, enrich the soil with more nutrients, and will improve the crop rotation. On the other hand, we will be getting more efficient in our cattle raising operations.

I will say that any economic impact will pay off, but it is hard to give an exact figure. However, according to my calculations I would say that profitability for contract feeding of animals will be at least 50%. That is, the profit margin will double. The reason is that now we pay nothing for unconditional grain and also the grain by-products we use cost nothing and they can be used to very big advantage. And that scheme requires very low capital investments. It is just a question of organization. We will need honest people to do that and I know those people because I was born in this area.

Another thing we will need to provide is veterinarian service and I will need to contract with a vet who will provide services to all those feeders. And those people would not ordinarily be able to afford a vet.

Regarding dissemination, I am going to talk to the 15 farmers who live in my village. I am also going to use our newspaper and TV which is owned by Sergiy Tsymbalov, a participant on the CEI Bakery study tour in 2000.

11.1.2 Sergiy Vdovenko, Pavlovo SABC

I was impressed with pretty much everything, with all the appointments and all the sites we visited. Let me start with the Cargill facility because actually receiving grain and the issues of grain quality are a burning issue in Ukraine. We have all kinds of problems, but with those elevators we have in Ukraine we have six grades of grain that describe its quality. They try to receive our grain as grade 5

or 6 and obviously pay less. Grades 1 and 2 obviously pay the most. Here I observed that there are mainly two grades of grain.

Another thing I was impressed with here was the crop management technology. The rotation of two crops that are used here is something that is not terribly progressive but is very practical. In Ukraine our crop rotation includes we have proved that the ideal crop rotation should include 5 to 8 crops as opposed to two in the U.S. But for us the American crop management of rotating two crops, corn and soy, is more practical because at this point we don't have money and we cannot expect investments or reasonable interest rates from the banks. So it makes sense for us to have shorter and smaller crop rotations: two crops rather than five, six, or ten.

Again, from what I have seen here I understand that we should not be climbing up hill – it would be a good idea for us to stay at the foot of the hill at this point and perhaps we should stay with two or three crops in the rotation and emphasize the crops that are profitable in our conditions and maybe try to do more research for this shorter crop rotation.

Sugar beet and sunflower and corn are the most profitable. If we are talking about vegetables, it is peas. We are not ready to eat soy and don't let anybody tell you that we are doing soy. Nobody is doing soy.

I understand from my tour in the United States that we should start doing soy now but that will entail a lot of problems. I wish that Roundup Ready seeds, made by Monsanto were available in our country because obviously we have a tremendous wheat problem, our herbicides are very expensive, and we need to plow at least once in every two or three years, and after plowing we plant, say sunflower.

During our visit to the ITM program in Wooster Ohio, I got confirmation of my old ideas that low-till is really practical. That is something our grandfathers were using and not necessarily that they were plowing all the time. The lady who hosted us there really provides confirmation to my ideas of the importance of low-tillage.

The thing at this point is that the statistics department is very powerful at the Rayon and Oblast level. Obviously they require a lot of paper work and they are trying to exert pressure on us to try to make us cultivate crops irrespective of their profitability. That is one reason. The other reason is that although farmers are trying or experimenting with crop cultivation it still doesn't make sense for us either financially or seed wise. If we had those Round-up Ready seeds available, the situation would be different, but at this point it really doesn't make much sense.

Farmers are experimenting with soy, but they are planting about 1 hectare which is nothing.

In my Rayon we have 101,000 hectares of arable land, so that is a very small percent. In my district I know of 2 farmers who are experimenting with soy and they have 0.5 hectares and 1.0 hectares respectively.

We understand that the future belongs to corn and soy. I am doing corn on a large scale and I have my own seed facility on my farm. Last year I really pieced it together from all over the district. I plant 1000 hectares of corn every year.

Out of the 1000 hectares I use 104 hectares for seed production. We grow three hybrids there and then I pack those seeds into bags and sell as breeder seeds to other farms elsewhere.

Also, we don't really have processing facilities for soybeans to make the soy appropriate for feed. We don't have enough equipment especially for large scale production. So it's important to neutralize the amino acids in soy, it is not enough just to extrude it. Actually processing this particular amino acid neutralization aspect is very important and most of our farmers cannot deal with that. This is one of the reasons why soy as meal gets imported from the United States which is very far away.

Our visit to the American Soybean Association was very important. At this point we have a number of problems in our farmers association as well as in our sunflower and corn associations. Often those associations are managed by old guard managers of all those collective and state farms. They are

really not doing very much and sometimes the farmers feel they provide an impenetrable wall. When I found out that only 10% of soybean growers are members of the American Soybean Association, it really inspired me with hope. Of course this ASA is a very powerful entity and provides a lot of lobbying for the American producers. But still, only 10% are members. To give you a comparison, I would like to tell you that only 3% of our farmers are members of our farmers association. Before visiting ASA I hoped the number would go up to 30 or 40%.

For three years I was president of our farmers association and I am also very active in the farmer's movement in our oblast and in the nation. I really try to fight for the issues I believe in.

I will try to convert my farm to no-till and low-till technology and I do have the equipment for that. We have drill planters available. Again, I would like to say that I was very impressed with what I have seen on the study tour so my engines are really operating at full speed now. Our profitability will improve because of our better harvests and yields but because of cost reduction. By using low-till hopefully we will be able to reduce our diesel consumption by 35 to 40%.

I am going to share this information with all the farmers in my Rayon and there are about 104 farmers of which 78 are association members. I would like to say that in our rayon the association membership is extremely high at the moment by Ukrainian standards. Also in this group is Viktor Lukotsky who on this tour and is president of our farmers association. So both he and I will be disseminating this information. I am going to publish an article in our farmers' magazine and I will provide you with a copy. Actually that is the magazine that had my picture and my new tractor on the cover.

Before this trip I heard a lot about Americans and I saw that there is much individualism and conviviality here. I would like to say that we are all individualists to some extent, although we are not allowed to be 100% individualistic because of the stereotypes and traditions and the pressures carried over from the Communist past. I understand that America represents a wonderful experiment essentially because here different various crops came together and as any smart person knows, it is much better to learn from somebody else's mistakes rather than from one's own. I hope the American taxpayers will forgive me for this statement.

11.1.3 Sergiy Vasenin, Promin

Actually I have made some sketches of what I have learned here. The first thing that impressed me was the usage of no-till technology. I really noticed that no-till is used globally here in every region we visited. I think the costs here will be lower than those in Ukraine even given the higher wages and salaries in the U.S. I also noticed in a specific region only the most profitable crops will be cultivated. And there is a lot of specialization in American agriculture. The third thing that I noticed was the use of global positioning systems. So GPS is used for soil testing, weather forecasting, etc. so American farmers are very well informed about those factors.

Understandably for that we will need a satellite since that should be a national program. We are still using those manual samples. Here we saw those sprayers that use GPS system for precise application of fertilizers and this is a miracle really.

Another thing that impressed me was that the farmers have their own grain bins and grain dryers on their farms as well as silos. Actually I have heard that the manufacture of the silos has been launched in Ukraine. Therefore, in the nearest future we will be able to buy these silos for our farm. As you know, all the grain was taken to the state run elevator in the past. Thus there was no infrastructure for grain storage on each and every farm.

If we had our own silo I would place it next to our grain purification system and the grain would be transferred directly into the bin as opposed to being driven 5 kilometers away. Now we spend 10 hryvna for each 5 tons of wheat now. All in all we have 35 tons of wheat a season and that costs 10,000

hryvna (\$2,000), and all of that would be saved if we had a silo on our farm. Of course, this only applies to wheat. That is only the direct cost and I am not talking about other costs such as depreciation, fuel, salaries, etc.

Another economic benefit is that at this point we just dump our grain into piles essentially and the temperature there is 25 to 30 degrees C. So the grain doesn't get cooled down sufficiently so the result is always a danger of combustion. If we had our own silo we could store the grain at the ambient temperature and the best temperature for storing grain is probably 18 degrees C. So that will help us manage risk better because it happened several times because of the high temperatures we had to sell our commodity grain as a fodder grain because the quality deteriorated. Having our own silo will certainly save time loading and unloading.

I was also impressed with the number of cooperatives and different associations here in the United States. At this point we do have the so-called agro-producers council both at the Rayon and the Oblast level although it is not really functioning properly and it has not been officially registered. So at this point I would like to say that we are trying to set up a so-called Solbozhanski trade house in the Oblast for all the agricultural producers. I believe it will be good for the farmers if we just unite our efforts and join ranks. At the same time we are having problems with the Anti-Monopoly Committee which is a government entity. So they think creating a trading house will be a negative factor because the farmers will essentially become a monopoly and that will jeopardize their interests.

Yesterday we learned at the American Soybean Association that the USDA is actually supporting this association to some extent. On the other hand, which is a drastic opposite; we have an antagonistic relationship between the government and the potential farmers association.

I was also impressed with the scientific advances, especially in Tran genetic biology (GM) and I can tell that your science has really pushed forward and ours is slightly behind. 5:16 – DS-10013

I notice here that the scientists and researchers are working for the farmer and all research has practical applications. Speaking of our interaction with research institutes, every year our specialists, agronomists, etc. go to Kharkiv and we interact with representatives of the institutes. They provide us with different recommendations and suggestions. So here I learned that those genetically modified seeds are allowed to resist European corn borer without using pesticides. So last year our corn harvest was to a very great extent damaged by the corn borer.

Of course you know that drastic transition to no-till is impossible. But next year we are going to experiment with it, especially when we are going to plant corn on soy after soy this year. So when we are going to do corn next year, we will be able to apply the 2-4-D herbicide which is somewhat similar to Round-up. At this point we do not have any Round-up ready seeds yet. So we will be able to plant corn after soy and use this 2-4-D herbicide. So after soy, the soil will be advantageous for planting corn. As far as tillage is concerned, we will have to look at specific conditions. If, for example, we see a bunch of entangled stalks we will need to do some minimum tillage. The biggest challenge for us is those Trans Genic (GM) seeds. The whole technology is based on these GM seeds.

Again we will need to look into the availability of those seeds and if they are permitted to be used in Ukraine and into the cost factor. Here I heard that the soy yield last year was roughly 6 tons per hectare. In comparison, we grow soy, and we got 2 tons per hectare.

This year we have planted 100 hectares of soy. Overall we have about 4,600 hectares. We grow grain crops in 2,200 hectares - mainly wheat and barley. We also grow some grain corn.

We don't have any chisel plows and I heard in the U.S. that chisel plows are used once every 5 years. We use regular plows and we also have a drill planter. What usually happens is that after winter wheat where we disk the land without deep plowing we can plant wheat on wheat or sometimes corn on wheat.

11.1.4. Viktor Lukotskyy, Zhelezniak Farm

First of all I want to tell you that I have really seen a wonderful country. I saw lots of smiling people, I saw that agricultural production was very well organized, that there is a lot of trust among people so people are not bent on having all those stamps and seals and signatures on all those documents. In many cases a handshake is enough. Other things that are different from my perception based on television and newspapers and I would like to say that America is a much more pleasant and more humane country than imagined before.

Speaking about farming methods, one thing that I was very greatly impressed with was the high management level. And also it was very important for me to meet those farmers and see their actual farms and learn about their life style. Although Professor Tweeten mentioned that small farmers are losing money, I saw that they are having fun, they are enjoying life and they like what they are doing. Their technology was not really a discovery for me because I am familiar with direct planting and no-till. But I have never seen that in practice before with my own eyes.

I was actually experimenting with leaving sea weed in the spring and planting watermelon seeds directly in this green manure and then spraying Roundup, etc. and all the weeds will be gone, the watermelons will grow for 20 days under this cover and here I learned that similar techniques of direct planting will be used for corn and sugar beet. Direct planting is almost the same thing as no-till.

I also liked the GPS technology and at this point Ukraine is rather far removed from that, but Ukraine is still one of the 5 space countries that have similar technology.

I liked what I saw at Pioneer and Monsanto. My attitude toward trans-genetic experience was rather cautious but I saw that they are really very safety conscious and they are complying with all the rules and regulations, they do a lot of tests, and I would like to say that my attitude is now better. Actually in Ukraine we now have a number of Trans-genetic seeds and plants anyway.

People are introducing trans-genetic soy and potatoes. It is being done quietly and secretly. There is no way to tell trans-genetic from non-trans-genetic.

The thing is that the economy using Roundup Ready seeds can be 100% better in the U.S. so Roundup Ready seeds can be 100% more effective in Ukraine because of very high fuel and seed prices.

I became convinced in the U.S. that we should be plowing not more frequently than every 5 years because our climate is very dry and every time we plow, moisture evaporates.

Another reason for using no-till technology is that our top soil gets blown away by the winds so the erosion is tremendous and that is an advantage in using no-till and low-till.

Buying new planters is very expensive for us, but I have some good ideas about actually putting together a previous planter using whatever equipment we have following ideas from John Deere technology. So I have some good ideas about making a 3 disk planter.

I understand, even for us, it is too expensive even for large farms to buy American equipment. Obviously here you have subsidies and our banking situation is different. What is realistic is to either make adjustments to existing equipment or to forward those adjustments to friends who work at plants (jury rig essentially something that is more effective and more appropriate).

At this point, plowing, cultivating, and disking constitute 80% of my expenses. So if I convert to no-till/low-till technology, I would be able to increase productivity by at least 300%. At this point for the complete cycle I spend 100 liters of fuel per hectare. Now, if I just use fuel for planting, it will drop to 5 to 10 liters. For herbicide applications I will also need 5 to 10 liters. So, instead of using 100 liters, I will be using 30 liters.

At this point we do have our top soil deteriorating and by using no-till and low-till we will be able to increase the amount of humus in the soil, also to decrease the number of runs of heavy equipment on the fields, and again, when there is a lot of traffic, the soil gets compacted and aeration breaks down – which should be prevented.

You know that it is very important that crop residue provides a barrier for erosion. For example, with the high winds, gullies 5 meters deep would get filled with top soil.

Professor Tweeten in his presentation mentioned that for a number of small farms, all farm income is extremely important. I am trying to diversify my operation by providing leasing services and I lease out my tractors, my equipment, and I also act as a go-between. I know people, I know places that require crops and I charge a commission by finding references as an intermediary for commerce.

What this Center could have done is to provide the itinerary or general information about what we were going to see that would have helped me to be better prepared. If this basic information had been provided here I would have been asking more in-depth questions as I would have familiarized myself with more information beforehand.

I liked everything. Speaking of the intensity of the program, it could have been more intense. I would not have minded seeing all of America. In addition to the business part of the program, I also liked the cultural program and I have been to the zoo and other places. Realistically, the program could have been more intense. We could have done 2 or 3 visits per day but I realize that this might have been hard for some participants. I liked absolutely every site we visited. None was boring or not of interest.

In addition to the farms, I was very interested in the visits to Cargill and the grain elevator operations and the Chicago Board of Trade although I don't know much about commodity exchanges and such. At the same time I was able to explore a number of issues and have different discussions with my fellow participants.

On the question of dissemination, first of all I am going to talk to my companions and partners and will suggest making some changes in terms of contracts and procedures on how we do business together. Also, I am going to talk to our local press and I will be working with them as well.

It was very important for me to see how the farmers live, their life style, and the way they organized their production.

11.1.5 Oleksiy Piven, Ukraine Agricultural Enterprise

Actually I have seen a lot here and I would like to tell you wholeheartedly that everything were was really wonderful and my conceptions about what I had learned in high school and later were really completely turned around.

Obviously, when a country has a strong economy, each and every industry should be working effectively and they are. I got confirmation of that in American agriculture when I saw that on the farms, at the institutions, at the laboratories, and in the companies we visited. I think your government has a very positive attitude to the farmers and the government is trying to help them – which really produces results. I am going to use all that, not only on my own land, which is 80 to 100 hectares, but also on the land of my big farm of which I am general manager and that is 1,000 hectares.

Speaking of no-till, obviously the costs are very low and that is a very good foundation or reason for using no-till. The results here for no-till are very impressive. That means that we will be able to use no-till with very profitable results.

I also liked the application of the GPS system, especially for soil sampling and testing. The reason is that in our country if you do not make your own soil tests, the government and institutions will provide this service once in every 10 years.

I will tell you something that might be of interest to you. Before planting winter wheat and sugar beets, I collected those soil samples myself and I took them to the Soil Research Institute in Kharkiv. They accepted those samples with a lot of reluctance and they made me feel that I was imposing on them.

As far as farmers operation go, of course they are very well equipped with different machinery which is very similar and their level of production is very similar too. A lot depends on their acreage. I was especially impressed with Peggy Clark's farm although I liked pretty much everything.

As far as what I plan to do when I return home, I have firmly decided to use no-till. The second thing is that I am going to plant soy. What is interesting is that soy can be used in our crop rotation instead of sunflower. At this point soy prices are pretty much level with sunflower prices but I feel they will be increasing. Thus growing soy will become more profitable than growing sunflower.

Even without government support for soy, I believe that prices for soy are pretty normal at this point. Commodity soy goes for roughly 700 to 1,000 hryvna per ton and the soy seeds go for 1,500 to 2,000 hryvna per ton. So I find those prices very acceptable. It would be very important that soy be bought and processed in the Kharkiv oblast. Let me tell you one story. Twelve years ago I experimented with soy, and I did this on the collective farm in the Pervomaisk district. So we grew the soy and shipped it to Odessa because nobody in Kharkiv wanted to accept it. It took 8 months and a loss to get our money back.

I have never seen this soy bean meal with my own eyes. I know in the past when we submitted our sunflower harvest to the government, we never got the sunflower cake back. At that point we had up to 1,000 cows and 2,500 cattle total and they promised they would get us the sunflower cake back. But that never happened. So they told us they were shipping that to Belgium and Holland. I felt that it was none of my business and I did not interfere.

During our study tour we visited Pioneer and I have known this company for a long time. At some time back in the 80s we bought Pioneer seeds in Odessa and I should tell you that their seeds were always of high quality. Using those seeds on our private plots we were able to grow corn by using industrial technology. On 300 hectares, without using no-till, we were able to get up to 55 to 60 hundred weight centners per hectare. For 2 or 3 years our farm was a show piece for the oblast. So we had oblast seminars in the 80s.

I would like to say the yield I mentioned was certainly not the highest, because what happened was that we used harvesters and combines to harvest the corn and they did a very poor job. So we had to harvest some of the corn manually and it took us forever into the late fall and the temperatures dropped to -5 degrees centigrade.

I have some general observations now about soy. I was very impressed with the high hygienic standards here and the high level of culture and interpersonal relationships. I was impressed with the desire of Americans to explain everything in detail. Nobody buzzed me off; people were very willing to share and show and were very friendly. I will also try to buy seeds only from the companies we visited if it is possible.

I really think that using no-till will have a very high economic impact so I hope we will be able to reduce our costs by 50%, and I specifically mean on fuel, machinery, salaries, and depreciation.

The thing is that we really should be using the same methods farmers are using here. In other words, work quickly and work effectively, because our plots are much more difficult and demanding than here. That will produce the desired effect.

I was curious about seeing absolutely everything and I would like to thank Belal for all the information he was constantly providing to us. Of course we were getting more and more information every day. I personally am interested in livestock so wish I could have talked to someone about milk and milk cows or could have seen them with my own eyes.

Actually I hope conditions will be right so we will be able to go back to 1,000 head or possibly fewer. Our present day policy is to keep as many head as possible. But let us say that I was the Chairman of a collective farm for 25 years and our best yield for a cow was roughly 3652 liters per year. Here, farmers get up to 10,000 liters per year per cow. Quantity of cows is not the decisive factor. It is a

And of course associations and coops are extremely important for us because here in America the term farmer is used synonymously with the term agricultural producer or grower. For us, we have major different classes or terms for agricultural producers. The first is “farmers” that is somewhat sidelined at the moment by the government. The second is the former collective or state farms – the large operation that again get the majority of attention from the government institutions. So that is why we small farmers need to associations and cooperatives to maintain our viability.

I have 550 hectares at this point.

I want you to know that I have been doing conservation tillage for some several years and I strongly believe the future belongs to these conservation tillage methods: low-till and minimum-till. The thing is that we hope to start doing it this year but we have very serious problems, especially in the recent years when we have problems with yields and finances. Our machines are old and the machines that do no-till are not produced here. We cannot apply for equipment loans and that is a major limiting factor – the absence of long term loans.

The thing is that obviously GPS should obviously be a federal program. At the same time, in each of the Rayon in the Soviet Union, we had pretty much the prototypes of agrochemical agro-service and cooperatives or plants providing services to the farmer. Of course a lot of things were stolen and lost, but at least we could have been building on this base. There is nothing we can really do now until the government sets up the GPS infrastructure.

It will be very important for us to set up non-profit coops to provide agro services to farmers and different entities. I don't really think it will be realistic for us to put up a satellite but still we should be creating our own infrastructure in terms of agribusiness.

Speaking about the economic effect, we are interested in Trans-genetic soy beans. I also heard at Monsanto that they are developing genetically modified sugar beets. At this point we are really losing money big time on sugar beets. So if we are able to get hold of GM sugar beets, we will be able to reduce our costs 3 to 4 times.

Wider expansion of soy is actually very important, using no-till to preserve moisture, and to reduce the number of runs on the field is important. Storage is extremely important although I would like to say that although we do not have grain silos the same as America, but somebody has started manufacturing them in Ukraine. So the production is already going on.

If we had our own silos we would be able to reduce our costs by 30%. Also, we lose a lot of money on transportation (15 to 20%). If we cannot dry it, there is a lot of loss to fungi, etc. There is obvious a very strong price difference between fall and spring. In the fall we sole our grain for about 200 hryvna but in the spring it is 600-700 hryvna. So we are talking about a 300% difference.

If we have bank loans that are due we have to sell at the low point. So this all assumes we are not taking out bank loans. Our loans are very expensive and we pay about 25-30% interest rate. Then it is very difficult to get loans from the banks so sometimes we need to apply for private loans and the interest on private loans can go up to 60% in hard currency.

As I teach agriculture, I am going to talk to my students and my regular classes; I am going to talk to the farmer's association, to the radio, television and the Rayon newspaper.

11.1.7 Valeriy Chmut, Kharkiv commodity Exchange

One thing that really impressed me was that each American farmer is able to obtain a huge amount of analytical information. Specifically I am talking about weather conditions, information from futures and spot markets, and for that the farmer pays \$250 per year. And this subscription fee is very little compared with the huge advantages the farmer obtains from using this information. I see no barriers that would prevent us from using a similar analytical service in Ukraine. We are founders of the Ukrainian

futures exchange that was created in February of this year and I learned a lot from Professor Tweeten's presentation at the Ohio State University. That visit was the most memorable for me.

Unfortunately we did not have enough time to spend at the Chicago Board of Trade and I could have spent all of my 20 days of the study tour here although that would not have been enough. I understand that in our country just as in the U.S., we should be trying to recruit not necessarily farmers but elevator owners and large traders who trade at the board of trade in Ukraine.

I also liked the following scheme where American farmers actually sign forward contracts with the elevators in the spring for crop delivery and the elevator operators hedge their risks at the futures market. And I think this scheme of using both forwards contracts and futures contracts at different levels is perfectly applicable in Ukraine.

I also understood that the Board of Trade and Commodity Exchanges could not exist without government assistance. The government, I discovered at the Chicago Board of Trade, supports the minimum and maximum price for soy and other crops. So they told us on that particular day of our visit the minimum price for soy was \$5.68 a bushel and the maximum price was \$6.28. That means that there cannot be wild oscillations in the price. And there are actually government institutions that govern those exchange relations such as the national Securities Commission and other regulatory agencies.

I was very impressed with our visit to the cooperative that owns a feed plant and that is something that I think we can do under our conditions because a number of private farmers and a number of farm companies own large plots of land. The thing is that they do not own their feed plant and they do not own their own elevators. And that is something we should be working on. This was a feed plant owned by Land-o-Lakes in Washington Court House, Ohio.

I was also impressed here with the fact that the American government establishes the minimum prices for major crops. It is also important that those prices are different in different states and the basis price depends on the distance between the farm and the elevator in the port of shipment. For example, in Ukraine the situation is different. The government establishes the same price, for example wheat, at \$400 per ton and it stands for both Odessa and Kharkiv although understandably, for Kharkiv growing we need to pay additional \$12 to \$15 per ton to ship it to Odessa. Odessa is the main terminal.

I am one of the founders of the Ukrainian Futures Exchange and specifically I am going to be talking to the national association of Ukrainian exchanges in July in Kiev and all of them know where I went and they are looking forward to listening to me and what I saw about the operation of American exchanges and about all the useful information I have learned here. At this point a committee on commodity markets is being created in the Rada in Kiev. Also the Board of Directors in our exchanges includes 4 parliament members and it is very important for me to convince them on the feasibility and practicality of creating commodity exchanges and boards of trade because lots of them have no idea at all about how those entities operate.

Actually I liked much more in America much more than I have described now. I was very impressed with our visits to Monsanto, Kinze, John Deere, Pioneer, and to specific farms, and no-till technology although that is of more interest to the farmers in our group. I have just been sharing information that I will be able to use in Ukraine.

I am going to publish an article at the Agro-Industrial Complex which is a highly respected journal in Kiev. Also I will talk to Kharkiv TV and radio reporters. I will also talk to the 4 Rada members who are sitting on the Board of Directors and our Ukrainian association of future exchanges.

From my point of view I would not have minded spending all the 21 days at the Chicago Board of Trade and with Professor Tweeten.

Speaking about this study tour for Ukrainian traders, one of the things those 4 parliament members can do is to partition USAID to include it in their plans. Speaking about the itinerary for such a study tour, I believe more general analytical lectures such as Professor Tweeten should be included. Also, it

would be a good idea to show them trades at the Chicago Board of Trade, provide them with an opportunity to communicate with brokers, and also some representatives of the Chicago Board of Trade so people who actually make it possible.

It would also be a good idea to bring them to the headquarters of such trading companies, major grain traders as Cargill, so they would be able to follow the whole chain of grain in the U.S.

It would also be a good idea for them to set up a meeting at the national futures and securities commission. We suggest you submit the request to the U.S. Ambassador with a copy to Ivan Shvets at USAID.

11.1.8 Lyudmyla Berlova, Department of Agriculture

First of all I would like to say that I really enjoyed the overall reception we have received here. I liked the openness that I saw in America. It is very different from the perceptions of Americans from what we had expected. We were told that Americans would be very contrite, would be smiling but would be shutting down essentially and being very secretive. What we saw was just the opposite and they were very willing to share.

Speaking about the professional benefits, we have a parable in Ukraine about an American. “How can an American man lose money particularly, if he invests in women, horses, or agriculture?” As I deal with all those issues, I am to some extent responsible for the fact that our farmers and agricultural producers are poor. In my line of duties I am responsible for infrastructure development, commodity trades, and crop sales and price monitoring. I was specifically interested not only in technological issues, but in sales as well as pricing aspects. One thing that impressed me as I visited a country mart was an agro-service cooperative. The mechanisms they have developed there, the relations between the farmers at the low level and top level actually deserve implementation in our country. There is a “but” here. Actually this cooperative idea is one that could have been developed 2 years ago but we did not use this opportunity as we privatized all those who were packers, dairy plants, etc. One thing that is still run by the government and we could turn into a cooperative is the 8 grain elevators of terminals we have in the Kharkiv oblast. So at this point in our oblast we have about one hundred and sixty micro-coops and each and every districts or Rayon we have several coops but not only do they deal with agriculture, but they provide services as well. They are specifically working with farmers in rural areas. So they do everything. They fix shoes, they do construction, they assist farmers in sales, they collect milk, etc. So they are universal coops of sorts.

Also I liked the visit to Ohio State University and our meeting with Professor Tweeten who provided us with a general overview of American agriculture and the educational system and also spoke of futures trade although he spoke of fundamentals essentially but that was also very useful. I think it would be a good idea to invite Professor to Ukraine and hope you will make it possible and could lecture at both agricultural universities in Kharkiv and talk to the farmers.

As I work for the Department of Agriculture, I was very interested in the work of our counterpart here in Ohio. At this point the situation is that, although have transitioned to a market economy, and we are trying not to interfere with the producers, but it becomes pretty absurd because we are sometimes afraid of ourselves. Here I learned that the government establishes minimum and maximum prices. And again I think we should learn from them and make a rule for ourselves not to be afraid of more strict administrative measures from which farmers will benefit.

I am specifically talking about providing tips to the farmers as far as price monitoring is concerned but also about certain crops to grow such as soy beans or sugar beet, etc., as opposed to trying to sell wheat at the foreign markets where we obviously cannot compete because of the low quality of our wheat grain.

I was very impressed with the monumental facilities of John Deere. We are working with John Deere dealers in Ukraine and trying to help them sell their machines. Our visits to Pioneer and Monsanto are quite a discovery for them. Of course we have some research laboratories but what I saw there about their research was absolutely shocking. I am very pleased that you included visits to those companies on your itinerary.

The thing is now that there is actually a new administrator at the oblast level who is responsible for technology policy and his predecessor, who is now in the oblast administration, developed a whole program of conversion from former military plants to civilian plants for manufacturing agricultural machinery and that is a very good program. And as the national administrator of agriculture pointed out, that is the only program of that type in Ukraine. The Minister of Agriculture came here to Kharkiv to comment on that and praised us for that.

Our visit to the American Soybean Association yesterday was mind-boggling. I guess I can use my notes from that visit and go ahead setting up associations. Please make sure you provide me with a printout of that presentation (this was done).

I have actually been working with auditors and boards of trade for about 12 years since their inception. That is why the visit to the Chicago Board of Trade was so extremely important. Again, we expected more from this visit, but the three of us stayed back and talked privately to the gentleman who worked there and answered many questions. The creation of a futures market is very important and that is priority number one for us and Valeriy Chmut is trying to promote this with the Ministry of Agriculture.

In Ukraine there are 35 exchanges responsible for trading agricultural products and two of those exchanges are in Kharkiv. I am talking about the Kharkiv Commodity Exchange, which Valeriy represents, and also Ukraine Commodity Exchange. The Kharkiv Commodity Exchange has been working in the grain market for 12 years and the Ukraine Commodity Exchange for three years. The Ukraine Commodity Exchange has been quite successful and they became a member of the National Futures Exchange Association. So they have paid their membership dues at a recent seminar.

My responsibilities are very wide as I work directly with management at the Rayon levels and we do have seminars or briefings every week. I take part in management programs. I take direct part in trades and collect requests for trades, and work directly with the Rayon managers. It is even better communication wise because the information I provide to them will be communicated to the farmers in their Rayon.

I also lecture at the Presidential Academy for Development Service so we are all the civil servants who are sent for training for four oblasts. So I lecture on commodities and also on management. And I also provide interviews for all the local newspapers. All the time they ask me about prices and about commodities and about exchanges and price structures.

11.1.9 Nataliya Savchenko, Svitanok Ltd Farm

In short, I was once again very impressed and convinced about no-tilling, because at this point I saw about 50% no-tilling and 50% conventional tilling. At this point in time I am fully convinced that I can implement low-tilling technology. I was very impressed with Roundup technology in the U.S. and I will look to use that technology in Ukraine.

In our country back home we sort of cultivate too many crops and we are spread out too thin. And I have been convinced once again that there is no point in spreading out to too many crops. We should concentrate on a few of them. I grow 7 major crops now.

I was also impressed visiting a lot of farmers and seeing that even though they have money, they prefer to work themselves thus reducing the cost of production. For example, I have 3,000 hectares of land and 500 cows. But I have 120 people and it is too expensive for me.

Our farm is located close to a regional center so we are not an isolated farm. I do not believe there will be any problem with jobs. I am in the Volchansk Rayon. Actually we have a problem getting good people because they leave. The city is close by and there is a timber plant and other plants so there is plenty of work and it is difficult to retain people.

I was very impressed by the relationship between the state and the producers. Back home we are still waiting for the time when they are going to give us the right to do something on our own instead of us pushing for the rights and regulations. We learned one very important thing and that is how to partner together and push forward our agenda and lobby for it.

The cooperative movement in the U.S. was a very interesting structure where the relationships between the producers, end users, marketers, and processors, are closely organized. We have a huge clientele. Everybody benefits out of it.

We dropped a big chance when the conversion of these industries was taking place. At that time we should have done this cooperative movement. At that time the cooperative movement would have been very successful. There are still a lot of government institutions which can be converted into cooperative movements. Basically, that type of cooperative movement is taking place right now. For example, sugar companies need sugar beet so if they form a sort of cooperative then both can benefit. The milk producers also need a cooperative movement for the supply of milk. Nobody wants to run an industry with chaotic supplies. So they are thinking of doing that right now.

For example, lots of milk companies and butter companies are thinking about this. They are starting to put their industry back in order and as they are trying to do this they need a good supply of raw materials.

This is the first year they are actively cooperating with us and they have given us the transportation and other things to make sure we provide them with the milk. In the Volchansk region, the food processing industry is very dormant. They have milk, meat, oil extraction plant, and feed plant that are very closed. All the plants in that region are depending on them, so slowly things are getting streamlined.

First of all I will re-evaluate which types of crops to cultivate (reduce the number of crops). That is number one.

I am going to go for cultivation and I was very impressed with what I saw in the U.S.

As for the reason for going into soy, I have done some investigations and market studies about soy and soy is very good right now. It has a demand. We can sell the soy, but I did not have the slightest idea of the technology including selection of seeds which is the main problem. I read something but that is not good enough. So now I am confident enough to do it.

In our region there are people who are actually growing soy although it is not a large amount of land, but again, they are doing it. It is encouraging. Volchansk borders Russia so is in the northern region of the Kharkiv Oblast. The farmers who are growing soy are in the southern regions of the Kharkiv Oblast where the climatic conditions are very different, even within a region.

If a farm has 2,000 hectares, the farm might plant 50 to 100 hectares of soy maximum. It is still not that big.

Most of the farmers in the area would prefer to cultivate sunflower, but unfortunately, with sunflower the rotation cycle is seven years. And it also depletes nitrogen from the soil. Since it is economically viable, people grow it, but it is harming the land. Soy puts nutrients back into the land. At this point there is a market demand for sunflower so the amount of land under cultivation is increasing, but that doesn't mean that the prices will increase.

I am going to be in communication with 20 farms and she will communicate through an article in an agricultural newspaper. There is also cable TV in my area and I will try to do something there. I will do all that, but the most important thing is that I get high results in business.

I am a very educated person and have two degrees. I have a degree in Education and an agricultural degree. So I am constantly in touch with literature in my field. But, this tour to the U.S. changed my whole outlook.

I would like to say that this program really embraced all the aspects of American agriculture and we saw just about everything including farm operations, relationships with government agencies, and research installations, etc. So pretty much everything was included and covered in this tour.

I would like to thank Belal at this point who knows so much about both American and Ukrainian agriculture so he was pretty much able to guide us by pointing out the things we may not need, but also pointing out the things that might be of benefit.

As far as suggestions go, I think visits to cattle and dairy farms could have been included since most of our farms are multi faceted and they have cattle as well. So including livestock in the grain program would be a good idea to many of the participants.

11.1.10 Valery Vertsun, Zolotaya Niva Ltd.

The fact that this study tour has been very beneficial will certainly result in my future application of the things I have learned here. I have no doubt that will happen. One of the things I have learned here is a general approach to agriculture in your country.

The most important thing is the boosting of productivity and efficiency. I noticed that during your acreage you have extremely productive machines. I am pretty confident that on our farms we will be able to use machines with equal productivity and that will be a good idea.

I think it was a very good idea that we drove through the corn and soy belt in this area where they have been growing these crops for many years. So basically what you have here is a stable crop rotation. The idea is to gain the most profit from those few crops. It doesn't mean that we should replicate your crop rotation under our conditions, but it means we should add soy and corn to our rotation, and leave sunflower and wheat, the crops that are very profitable at this point. In other words, the idea is to expand our crop rotation range and replacing those two crops. At the same time we should get rid of a lot of other crops we don't really need because at this point we cultivate 15 different crops. We should get rid of some.

I would get rid of the crops that are not profitable I can name millet and barley.

Another thing we noticed here is that farms specialized either in livestock or crop cultivation. That is something that we are doing on our farm. We are doing grain production and we have reduced the number of crops that are grown and here in America I found confirmation for some of the ideas I had before.

So after returning home I am going to talk to our farm council and I am going to show them my video tapes and I will specifically talk to experts from different divisions and I am going to tell them everything and show them everything. After that I will start working with our agronomists and we are going to calculate the efficiency of the new rotation plan.

We all know that agriculture always involves great risk. Here it was raining a lot and we noticed that some farmers had just finished harvesting or were still harvesting. In our country the situation is just the opposite. It is too dry. But the idea is that a certain technology, certain strategy can be developed for any weather conditions. The idea is to minimize risk by using effective technology. Even if the minimum amount of rain falls, we will be able to get some profit. Again, it is very important to develop very precisely these research based technologies.

It is a part of the Russian culture to hope that maybe it will not happen. Maybe nothing bad will happen. Some people think that maybe weeds will not be a problem this year, or maybe we will get the right amount of rainfall. That is wrong and we should really be using research based technologies and if

we run out of money we should find the money. And make sure we do apply the right amount of herbicide. If the technology has the right amount of herbicides, they should be applied.

Also I got a very positive impression from spending time with the farmers. All of them gave a very warm reception to us and all of them were very friendly. So I would like to thank you and them.

Speaking of no-till, I am not going to tell you that we are going to apply no-till 100%, but we will be able to do elements of low-till technology. I am not going to tell you that we are going to use Roundup Ready soy beans, but we do have an option of using Roundup after planting before crops emerge (pre-emergent application).

I was very impressed with the GPS system and at this point we do maybe 2 or 3 soil samples on an area of say 50 hectares and that is not enough. It is very important to know the precise chemical content (nitrates, phosphates, potassium, etc.) of each piece of land. If we know that it will reduce our costs in terms of fertilizers, fuel, etc.

We were going to do a soil test on all our acreage this fall, but I realized while on the study tour that it is better to pay more to make a very in-depth and detailed specific analysis and to increase the number of samples many times.

Explanation given by Belal Siddique

In America we plot the entire farm and on each plot we take one or two samples and via GPS we control which area has been taken. Then for each sample, we may know that the content is different or deficient and may find that one plot has lower phosphate content and this needs to be increased. The idea is to bring the entire field to the same soil condition. You do this by knowing exactly where you are on the field at all times and the computer controls the chemicals that are to be sprayed on each plot. The equipment carries a variety of chemicals and fertilizers so it can apply the right fertilizer to each plot of land. This is very precise and they will be able to use a portion of the idea manually even without a GPS system. The key is to make very extensive soil tests. In Ukraine the fields are very large and it is almost impossible to do that manually.

We do know that during the vegetation periods plants are supposed to consume a given amount of nitrogen, phosphates and potassium. If one element is lacking, for example, we will not get any good results. The whole idea is to provide very balanced fertilization.

I was very impressed with the storage facilities here with dryers inside the grain silos. As we are going to introduce soybean and corn, we have to seriously consider introducing those facilities. I was very impressed with the “mini tower” here which is a grain tower and it costs \$450,000 in Ukraine but \$130,000 in the U.S. Obviously the sellers in Ukraine make a huge profit. The reason why we need those grain dryers is that if we are going to harvest corn, we must do it in October when it rains a lot.

The weather here during the study tour is not typical. It has rained almost every day. Back home in Ukraine it has not rained since we left.

Valeriy is a new type of farmer. Unfortunately he does not own the land, but he leases 6,000 hectares of land. He is a very good farm manager. He could really use storage facilities for a farm that size.

At this point my partners have been dealing with exports for a long time and they export corn, winter wheat, etc. For us, there are different grades and the grading of crops is very important. That is how the traders make their money – by cheating the farmers. They sell the crops as low grade but sell them as high grade. So to avoid this down grading, my partners and I are thinking of purchasing a railroad spur and putting storage facilities and grain dryers there and essentially creating our own grain terminal.

My farm is a good example of a complex essentially – starting with production and ending with exporting. Although we do have different operations, which are registered as different entities with

different taxations. We do not we do not place all our eggs in the same basket. At this point we are not actually talking about putting up a railroad spur, but purchasing it.

Our rotation will include corn, winter wheat, soy, sunflower, and fallow (uncultivated that year). That will be about 20% for each of those five crops so there will be about 1,200 hectares for each crop.

At this point we are not considering processing soy. We are talking about selling it if the prices are good.

I would say that our domestic prices are comparable to yours even on the domestic market. At this point Europe imports soy so if we start our domestic production that might provide good results.

I plan to talk to 2,000 people. I will write an article and have an interview with the local newspaper.

11.1.11 Viktor Severyn, Novy Shliakh Ltd.

I have seen a lot of things in the U.S. all these days and I am more interested in reorganizing the structure of my entire farm and the technology of production, taking into consideration all the climatic conditions that we have in Ukraine. Of course had heard a little about the U.S. beforehand, but now I have seen it with my own eyes. We very quickly became adjusted to the situation here in the U.S. so whatever was necessary we did. People have been very nice and kind. One thing he found very interesting in America was that that amount of land cultivated by one person here is much larger here in the U.S. than what they do in Ukraine. They liked the no-till technology but of course all the conditions for using no-till are not there in Ukraine. Still what they saw here they can slowly replicate in back in Ukraine on 3 to 10% of the land.

They have been cultivating 15 different crops and they understand that they have to reduce this number to about 10. They cannot reduce this further because the farm is not geared to that type of operation.

Basically there are some political items such as sugar beet since the factories are dependent on the sugar beet cultivation. So those plots of land are fixed.

Lots of stress is being given by the local government and the administration to cultivate soy.

They are convincing us and pressing us a little bit. There are already some factories coming up where they are making soy milk and there are soy processing plants. The price is not bad. For example, they can sell soy at \$1,500 per ton and the seeds can be sold for \$3,500.

Kupiansk Milk and Borovskoy Milk are now producing soy milk.

There are difficult climatic conditions, especially this year, are very dry so the technology is still not worked out. After what I saw here to the U.S., I have changed my attitude and a lot of questions can be re-evaluated and soy cultivation can be started. We understand that soy cultivation is good because it is good for the soil and other things. He can also do the minimum tilling and it doesn't destroy the soil. The only restraint now is the technical resources. And we are working to acquire that new technological equipment. The wide use of herbicides is for both protection of the land and also the plants. Practically we can consider using 25% of the land for soy cultivation.

We have about 4,000 hectares. That would mean about 1,000 hectares for soy.

We are considering the use of trans-genetic seeds. Already they are using lots of chemicals in the food system and they are over-using land and losing moisture so from all points of view, trans-genetic foods are the ultimate solution. We are already eating all sorts of "rubbish" and nobody talks about it.

The atmosphere in America is much cleaner than in other countries. We have visited many farms and there are devices for cleaning the air of all the smells and other chemicals. The U.S. has much stronger chemical protection laws than other countries. I really envy you that you have done so much better than we have. The country is very beautiful and well managed with all the flower beds and

beautiful green lawns. I have not seen this in any other country. This is part of the culture and we will take back good impressions. Last year I saw one lawn mower in Kharkiv.

In the fields I did not see any manual work. In some of the factories we saw manual labor in the assembly operations. That is merely a question of economics: mechanized labor or manual labor. Ukraine now had cheap labor and we need to use this.

Dissemination: He is one of the leading farmers in his region and he has given lots of interviews to newspapers and television and he is going to follow-up on that.

11.1.12 Mykola Zasukha, Pervoye Maya Ltd.

(Zasukha means Drought)

I have been working in agriculture since 1970.

The first thing I am going to do when I return is to share my impressions of America that I saw with my own eyes. Thanks to your program I had a chance to follow the whole cycle of grain production from level zero starting with growing to selling grain and trading grain and processing grain.

Here I noticed that a lot of farms have a narrow specialization and they would cultivate two or three different crops and that is it. On the other hand, we do pretty much everything. We do grain crops, we do feed, livestock. Also we have an all together different vision of what villages are all about in the agrarian section in the country in general, in our oblast and in our rayon in particular.

Your ideas of no-till are not really new for us and actually our volumes are larger than your farmers. The thing is that you cannot really apply no-till 100% because we have very different conditions. Our climate is different, the weather is different. Whereas here you have rains every day, we do need to avoid deep plowing to preserve the moisture in the ground for the winter.

It was great that we had a chance to visit so many large companies such as Dupont, Pioneer and a number of other facilities. We have been cooperating with all those companies. We have been buying seeds from Pioneer and Monsanto, etc. and all those seeds have been having a positive economic effect. Today it is important for us to go back to soy cultivation. For me it was very important to see how soy is produced in this country. I learned about new herbicides such as Roundup that can be used on soy acres. I asked the American Soybean Association if Roundup can be used for conventional soy grown from non trans-genetic soy and their answer was positively "yes". We can use Roundup. That is what we are trying to do. We are trying to increase soy acreage and this particular crop has become economically advantageous in our country at this time.

About two years ago we purchased a Kinze planter and here while visiting the Kinze Company I asked them for 6 bearings. The reason is that the old bearings on the Kinze planter wore out. So I asked for new ones and they very kindly provided them to me. I am very happy with this Kinze planter. It is extremely efficient, extremely reliable, our operators can see where the rows are and they can see the regulated density of planting. So that is a very good planter. It was interesting to see that they do not produce that model any more. I hope at some point the manufacture of planters and such will be set up in our country as well although we do have a red star factory but it makes planters of a different type.

We also cultivate corn and use herbicides but we have different varieties of corn compared with yours. We have our own regional varieties that fit our own climatic conditions. Our problem is to dry the corn because unlike here where each farmer has a grain dryer, we do not have them. So to make sure the corn can be processed, we need to dry it. And this year, since the winter crops have perished, we have expanded the planting of corn and sunflower and we use industrial technology for those two crops. We also grow sugar beets and that is a major crop for us. So when we were in Monsanto and Pioneer we asked them about herbicides and GM seeds for sugar beets and they told us they are still working on that. So that project is still under development.

In our Rayon our farm is one of the best. We are not the worst and Dan McKinney of CEI was convinced that was really the case. At some point we started producing sugar beets almost without any manual labor by applying herbicides. But today it is more economically advantageous to use manual labor. It is cheaper to pay some women to weed the sugar beet in the fields than to use herbicides. Hopefully one day the situation will change and we will go back to herbicide technology.

What we are going to do is to introduce soy and we are going to expand our corn fields, we are going to continue our cooperation with Monsanto and Pioneer both in seeds and herbicides. That will produce an economic effect but it is hard to determine the exact amount. But it is pretty obvious that if you employ people on the farm, the greater the economic effect. At this point we have too many people.

I would say that the economic effect from using the innovations we have seen here can reach 20 to 25%. Of course it would be wonderful to reinforce our new knowledge by using machines. They are available but are pretty expensive at this point.

I have 4,800 hectares of land and 250 employees which is too many.

If I talk to the television I will reach about 10,000 people at one time. I will talk to about 1,000 people in my own town.

Again I would like to thank the Center for Economic Initiatives and its leaders for providing this opportunity for me to visit the U.S. I thought I was too old to come to America but it turned out differently and I thank you for this chance you provided me.

14.1.13 Anatoliy Synelnyk, Rossolova Farm

Mykola Zasukha and I are from the same region and they have been cooperating for a long time. He has a seed base so he can provide the seeds and he is now convinced that soy is a good crop. It can even be more profitable than sunflower. If he gets a minimum of 15 to 20 centners per hectare it is still will be profitable (he should get 35). Besides, in his region he can sell to Kupiansk Milk and he has a ready made customer there.

He has been talking with one of the other farmers because when you cultivate soy it is very moist and the moisture content is very high. Wheat is pretty dry because of the specifics of the grain. So he got an idea from someone here to mix the wheat and soy together and he will use a centrifuge to resolve the moisture problem. He is already using this technique with barley and peas. Because there is a problem with grain dryers since they don't have grain dryers. They saw the grain dryers and it is possible to start making those dryers locally. He has a grain storage facility but unfortunately it is very flat and too big. What he does is to partition the whole area but in America he saw that these are not huge ones but they are partitioned and each partition contains its own grain.

There is a region in Ukraine there is a manufacturing factory where they make galvanized products. He is going to describe to that factory what they saw and try to convince them of the need for silos and he believes there is a possibility of getting them to manufacture mid-sized silos. Most of the farms in Ukraine are now breaking down into smaller sizes and they need these silos.

I have 2,200 hectares.

I think this is too large. In America the optimum farm size is 500 to 800 hectares which is roughly 400 acres which is manageable. So I want to divide this farm among his family. Then each portion will be a manageable size.

I can go ahead with corn without new technology. With soy I am not still sure because of the soil and climatic conditions. They haven't finalized the type of seed that is best. The only problem with corn is with drying it when it is harvested late.

I have seen Kinze seeders before but this was the first time I have seen them in action. I was very impressed by Kinze and want to buy one of them.

They are trying to develop a cooperative movement such as developing meat. They would give each individual a task not under one command but separately. Somebody is going to raise the piglets, someone is going to give them out, and someone else is going to do the meat processing industry in that area. Basically they are trying to reduce the transportation and other costs and at the time be more effective among themselves. There would be different agro-industries. They could be feed, they could be meat.

One of the reasons why the meat industry is not profitable is that the cost of producing the meat is too high. If they do this subcontracting they will be able to reduce costs and make a profit. At this point in Ukraine, production costs of meat are very high.

He thinks he has to improvise technology. He is an engineer by education. At this time they are using a seeder for sugar beet. They have to group a little different way and then they will be able to convert that seeder to soy.

You have to improvise everything. In America they have narrower rows. They will increase the width of the rows to take into consideration the local climate. If the plant is a little bigger it will be easier to harvest. So that type of adjustment will be done. Of course the Roundup that is used in America is expensive, but they have an alternative. Another problem is that the soy harvest takes place at the end of September when the weather is very unstable. The fields get very soggy then. That is why people are a little scared about planting soy. They have to fine tune the methodology.

The whole idea at this point is that we have a lot of pastures, with perennial grasses etc., so we keep a lot of cows there. Here in the U.S. I noticed that there are a lot of cows with calves out there in the pasture. Then I thought that what we do now is to sell those cows that do not produce enough milk, with a low yield, to meat packers. If we put them out to the pastures, let them give birth to calves, let them raise those calves, and then we will essentially get free feed, because we have more pastures than we have cows, we get very cheap milk, and we get very cheap meat. So we benefit in every situation. Previously there was an imbalance and they had a lot more cows. They are just trying to use the land more effectively. Sometimes it is more economic to get meat than milk.

We also have the situation where we cultivate too many crops. We have seven to eight crops. Now we find that in the U.S. they have only about 3 crops and they are doing fine. In any case, only about three are profitable and the rest are breakeven and take a lot of time and effort.

Previously the government was telling us what crops to grow, but now they are not bothered about those crops. The place where the government intervenes is with sugar beet. That is a political decision.

A typical problem is that people will go with fads. If one year the price of buckwheat is low few people plant buckwheat and the price is high. If we specialize in buckwheat, we should continue with buckwheat every year. The market is unstable because of our behavior. If we specialize, things would be much better.

He liked these companies that provided land testing using the GPS system. Typically in Ukraine they are over using chemicals and that is very bad. In American that is being very evenly applied.

I expect that I will achieve at least 400,000 hryvna in profits next year taking into account whatever I learned in the U.S. That is two times my current profit of 200,000. If I don't get at least 400,000, my trip to the U.S. will have been wasted.

There should not be any problem in getting soy in the market. They are importing soy from distant places and transportation costs are high. If they can produce it locally they will all benefit. Already in Ukraine they have started selling soy based meat and other products.
End Anatoliy Synelnyk

11.1.14 Sergiy Popov, Institute of Yurieva

After looking at everything here on the study tour I realized that without a stable foundation in the country it is impossible to achieve a high level of agricultural production.

What was really amazing was that the products used by American farmers are surprisingly competitive. And what we saw when we talked to farmers was that they are essentially thinking of one thing – how to decrease their costs and increase their profitability and how to make their operations efficient. The farmers are confident and this confidence results from a number of different services including weather predictions, forecasts, agro-chemical companies, and all these company links are working very smoothly.

Professor Tweeten touched on this point. I asked him how farmers get their information and provide counseling and get their research based data and he said that our system is based on a tripod – farmers, agro-business and government (the public sector). The farmers think they are the main leg in the tripod. There I realized that all things worked together so there is a very important connection between research and farmers.

Basically the farmers really do not need to think too hard about which technology to apply. The members on this study tour are constantly fighting over the right technology to use. Maybe this thing is better or maybe another is better. It is not really important to know if they will choose technology A or B. All these technologies are well defined and we need to choose the correct one. If you choose to make minimal investments, you will get, for example, 30 centners per hectare. The more you put in the more you get out. So then Professor Tweeter showed us the whole table – the correlation between the size of the farm (small, medium or large) and the efficiency and productivity.

For us, let us take no-till as an example. So there are people who have been working on this for 25 years. There have been Universities and government departments researching it and people have accumulated a lot of experience for this no-till. They probably have visited this country. So now they are trying to apply no-till where they live.

I understand that all people would love to install no-till but they do not have such an opportunity at this point. I know that 3 individuals in our oblast have converged to no-till. Of course we have this 5 crop rotation. So they apply no-till to 2 crops out of 5. What they did was to jury rig their own equipment and changed something or made some equipment because they are enthusiasts. And I know pretty much what should be used on eroded soils and what should be used on flat surfaces, etc. So they do not have such implements or equipment or machines that are available here. Much really depends on their own enthusiasm. On the other hand, those people as we say are “stewing in their own juice”. They are pretty much willing to shear what they are doing. Because of my line of duties I travel a lot and have been watching what people have been doing for 2 or 3 years. And I know that they do not call each other and they do not contact each other to exchange information. Sometimes I think that is a pretty weird approach and there is no connecting link between research and farmers. The government is not encouraging it. In other words, research data is not communicated to the farmer – the final users. The farmers are enthusiasts and are great people and are doing great things and paving their own road.

Obviously we can understand that government cannot now support and fund research and science at the formal level. So what the government is funding now is not theoretical research but more practical applications. So, for example, I go to Kiev agricultural academy every month and the idea is that they only provide funding for practical, measurable programs. For example, if we want to have fundamental research in bio-technology, or genetics, or breeding, we have to find money ourselves. And if our institute makes money on seeds, then to fund my research, or any research project, I have to invest my own money. The agricultural institute is not financing fundamental projects.

I believe we can increase productivity of agriculture in the Kharkiv Oblast by 15 to 20%. One thing we are trying to do is to revise the sizing facilities for corn. We do have about 4 or 5 research farms

essentially, and experimental farms with a total acreage of 1,000 hectares. We do understand that without quality seeds it is impossible to fight such oligarchs as Monsanto and Pioneer, etc. And the thing is that our farmers prefer to buy high quality seeds. Pioneer seeds yield more than 100 centners per hectare which is impressive. So being a representative for a center for scientific research in support of agriculture I am this connecting link now between research and farmers. So at this point what I do is that I provide the following service to the farmers. I calculate the economics of the operation. So they provide me their inputs or expenses. I put this information into my computer, I use special software, I can calculate their profits, their incomes, profits, and margins, etc. At this point I can tell you about Monsanto or Pioneer seeds. Their price in hryvna per kilogram is roughly equal to that in dollars per kilogram. What I'm saying is that the price of our domestic hybrids in hryvnas per kilogram equals the price of Monsanto/Pioneer seeds in dollars per kilogram. Since the exchange rate is 5:1, the price of seeds is also 5:1. It means that if our hybrid sells for 5 hryvna per kilogram, then Monsanto seeds will sell for \$5 (25 hryvna) per kilogram.

Let me give you another example of corn. The idea behind buying expensive seed is that the corn will not need extra drying. Everybody understands that. The thing is that here we were asking all those questions and we understand that the potential yield for different crops is pretty much achieved in America. Here its potential becomes realistic. It is not the case in our country. For example, if the potential for sunflower is 35 centners per hectare, we normally get 14 to 20. If the potential for corn is 80 to 100 centners per hectare, on average we get 30. In other words, we could increase our productivity by 50% at least by applying with existing technology – by planting and harvesting at the appropriate times and by using all the equipment. Equipment is definitely a problem.

Another thing I was impressed with was the creation of those trans-genetic hi-breads. Of course there are some concerns in Ukraine at this point. On the other hand, their profitability is much higher.

As you know, there are two major challenges; major limiting factors as far as our soils go. It is a lack of moisture and very high weed pressure. In one square meter of tillable land in the top soil we find up to 3 million weed seeds. We understand that some of them are dormant for while. See, if you apply no-till, you have to use herbicides because what happens is that with the crop rotation, only at the end of seven year can you expect to get some profit. So no-till is impossible without herbicides. So many farmers quit because they don't have money to buy herbicides and they go back to conventional tilling.

So our research is really wearing seven league boots. They are really pushing forward because otherwise our system will not survive. The thing is that obviously our growers and farmers will be choosing the least expensive inputs to obtain maximum profits. So basically it is very, after visiting and talking with the farmers, and the universities, and companies such as John Deere and Monsanto, that I understand very well that we will pretty much stay in the saddle on the horse we really need to increase the pace of our development by us I mean the connecting link between research or academia and farmers.

I have really figured out a lot of things as far as service and corn go, but not wheat.

11.1.15 Viktor Kostenko, Department of Agriculture

I was very impressed with the no-till technology, soy and corn. The only concern here is that at this point we do not have any manufacturing for direct planters and direct drills. I know that representatives from the Malishev factory and the Kharkiv Tractor plant will be coming here in September. So I hope we will be able to sign an agreement with them on producing or assembling such machines in Kharkiv. While in addition to being a government official, I am also an agronomist supervising two farms where they grow soy using pretty much the same technology we saw here. They do use a direct drill but it is not a disk drill but rather an anchor drill.

At this point we invest up to 1,300 hryvna per hectare of soy. By using that technology according to my calculations we can achieve up to 200 hryvna per hectare real economy. That is, they can save up

to 200 hryvna per hectare by using no-till technology. What this means here is that tilling is obviously reduced.

I have worked for the government for one year and to come I would have needed to get permission. I did not want to get involved with this bureaucracy so I am using my vacation time to come on this tour. If I don't get something seriously accomplished, I might leave after one year.

I also liked very much your grain storage facilities. It is really a shame that no one in Ukraine manufactures such silos. They are making them in Poland but they are a poor counterpart of American silos.

Every year during the harvesting season we have to get ready to prepare all those grain storage facilities essentially so what happens is that we need several people who are experts, for example, in technology in receiving grain and storing grain. We need an accountant who knows exactly how to record different batches of grain that arrive. We will need an operator who knows how to load those elevators, we need a warehouse specialist, we need someone to disinfest those barns or silos from mice and those bugs, etc. Here it seems that the farmer doesn't really care about all those things. He delivers the grain, someone pushes a button, and the grain automatically gets elevated.

I also realized that if we really are going to cultivate or grow corn seriously, we need to convert to Pioneer hi-breads and varieties. The cob on the Pioneer is very thin so it means that the moisture will be accumulated in the stalk. That means that your corn cob will have roughly 16% moisture in the cob which is very good. We cannot get any moisture level below 23%.

Speaking about fertilizers and fertilizer systems, here I saw very visually that nobody uses dry fertilizers. On the contrary, in our country, very few farmers use liquid fertilizers.

Although we don't have a system for making those fertilizers, but there is a solution. We can make mixtures and can achieve all the compositions we desire. At this point what happens is that if you introduce dry fertilizer, on a wrong day, if you miss the perfect weather pattern, then it sits there all winter and in the spring it gets dissolved or gets washed out and although you have spent a lot of money you get zero results.

We saw winter wheat only on one farm, but on that one farm I learned about their approach to fertilizing. This farmer applies the 28% nitrogen, salt-peter essentially, dry fertilizer in the fall and then during the vegetation stage, he applies the liquid solution which is 46% urea. The advantage of liquid over dry is that the nitrogen lasts for a longer period of time.

After visiting the U.S. and as a government official, I am to set up and encourage associations. We do have a similar service which we call a Council of Agricultural Producers. Frankly speaking, it is a group of retired bureaucrats designed to provide them with some additional income. Their results are essentially zero.

We are trying to make forecasts for the harvest for that particular year. We try to recommend some quotas essentially what should be produced and how much, etc. Here everything is regulated by the market. Associations study markets and do market analysis and come up with their recommendations.

There is another entity that I liked here and that is the cooperatives we visited. They help the farmers sell their products to different customers. It is in addition to associations and those cooperatives we should be providing legal council since during this reformation a number of mistakes have been made and practically, farmers are very vulnerable and if someone wants to get rid of a farmer it can be done very quickly. So protecting farmers legally should be a priority.

I have filled out all this notebook and I will spend a lot of time decoding and digesting it.

It is not just by chance that soon after my arrival in the Oblast Administration that we took the first place in agriculture in Ukraine.

11.2 Aquaculture Study Tour

11.2.1 Antonina Slobodchuk, Pechenegei Fish Farm

The first conclusion I have drawn for myself is to take English lessons when I go back to Ukraine and to master the language at least at the everyday level. It is very hard to function without knowing a word of the language.

One thing that we liked a lot is the stability in your country. People are not lazy and are willing to work, have a job, and can receive decent dollars and live pretty well.

I liked all the farms I visited, there were some interesting and useful things I saw in each and every farm. I understand that most probably were shown the best farms. I am perfectly aware that there might be other farms that could go through difficulties, and we couldn't just see everything. I do understand that it is pretty hard for us to operate, but I do understand that American farms also have their difficulties.

One thing that I really liked was the closed, the indoor recirculating systems, and I do believe the future belongs to those indoor recirculating systems. You have been to our farm, you know they have huge acreage, but with all this we cannot use our ponds effectively. But we certainly could do that with indoor systems. And I do believe that the future belongs to them.

Another thing I liked a lot was the federal hatchery. That is something we could do just as well. You know there is this huge Pechenegei water reservoir next to our farm. And it is something we could start doing, and that is replenishing the fish reserves. I actually thought about that in the sense of asking our governor, and hopefully we'll be able to push through this idea. Maybe we could use American experts who would come and visit with us and maybe work with us. So what we could do on our farm is to provide hatchery services. We could grow fry, baby fish, and stock the Pechenegei reservoir. And another service we could provide, we could start selling tickets or licenses for angling.

Well, the thing is that we do not sell tickets or licenses at this point, because we're working on putting our farm to order because we took it over in very bad shape. What happens with the reservoir is that they catch fish commercially there. This really depletes their reserves very badly as opposed to just angling.

What happens is that the federal or national agricultural department in Kiev sets the orders for the volume that can be caught in Kharkiv. And of course, in Kiev they have no idea about the real situation in Pechenegei. We are the only farm that actually does stock the Pechenegei reservoir. But we are not paid back by the government. So they did not compensate us for our expenses for stocking.

At this point there are about 50 different priority companies and individuals who get those quotas. Who get a part of this pie that the Kiev department determines. And of course, there are poachers, too. But at this point, those companies and those people have nearly brought the fish to ruination. They've fished it out. But when they saw at one of the universities how many people are working on scientific calculations and collecting data, I realized that it was a wonderful service for us to provide to grow greater fish and to stock the pond.

The marketing aspect was not really emphasized. I actually spoke to Jeff about that. Yes, I did like Ed Watson's marketing presentation. It was very interesting, although I was familiar with some of the points he mentioned. One thing that I have not seen, that I would like to see, is to see American commercials for fish and fish products.

We picked up some of the advertising materials in the stores visited, including recipes. That is something we are going to use in our situation.

I have collected so much paper that I wouldn't be surprised to be charged for excess weight.

Basically we all grow the same fish. That is why we are interested specifically in other fish such as rainbow trout, paddlefish (spoonfish), and shrimp.

You know that today in Kharkiv we have pretty decent supermarkets, and I believe there will be some demand for all those alternative species considering the restaurants, etc. Of course we cannot do it today, but probably tomorrow, we need to calculate our financials for that. Again, that is something I am seriously considering doing.

Also, we do understand that if there is a certain demand that presupposes a supply. When we look at the situation in Kharkiv I see that there is some revival of the economy. Some plants begin to operate better. It means the people get jobs, and people get paid. So it means that at some point they will get more money to buy more expensive fish. And even observing a situation here, I realize that in the United States over the course of ten years some new fish emerged on the market. And it was not done overnight; it was a gradual process. So we should really consider producing and selling tastier, higher quality, but more expensive fish, hoping that people will be able to afford it at some point.

Giving out recipes is a very nice way of promoting the company as an extra service that they provide. That is something I really picked up, that I really learned here big time. I picked up recipes here, and waiting to experiment on new dishes. Again, when you come to visit us again you will have a chance to taste them. There are not many cook books on the market.

When I go back to Ukraine I will make sure that I publish at least two articles in our Rayon newspaper there and also the Evening Kharkiv. We will be sharing our impressions about America, and also we are going to use the newspaper space to announce a free consultation that we are going to provide for the farmers. And we do have a lot of clients who are the farmers who buy our baby fish or fry and we're going to share this information and what we learn here. At this point we have up to 100 customers.

They stock their ponds, they grow out their fish, and then they sell the fish independently.

And, again, with each of them I will be able to talk about creating a cooperative.

What I'm going to do when I come back, I'm going to put up my certificate of completion on the wall, so it will mean that people will trust me more.

We know that this certificate will increase their trust in us. Trust is a very big issue. But we're going to show them the report; we're going to tell them and show them pictures, etc. We are in a unique situation, because a lot of customers come to our farm either to buy market sized fish or to buy baby fish.

Another thing I would like to do is to meet representatives from the feed plants that supply feed to us, and talk them into producing an experimental batch of new feed with an 85% protein content. At present the feed they provide to us has about 23% protein. So I have to talk them into increasing the protein content 3.5 times. And I would like it to be an experiment since we don't have funds to do it on a large scale production.

The thing is I still have to talk to experts who will tell us whether to use soy or make the fish meal, vegetable or animal protein. But actually the idea of increasing protein content in feeding is, again, very interesting, very exciting, because all this makes fish grow faster, and that's something that we should consider.

I believe that the fish will grow at least twice as fast; and at this point our food conversion is roughly one to five. But using this type protein feed we will be able to get the food conversion maybe one to two. The fish will be gaining weight much, much faster. This will mean that ultimately we will sell the fish faster, will get money faster, etc.

It also will give us a chance to study our own fish earlier, while our competitors cannot do that yet. It means that we will be able to get a much better price.

In Kentucky they get grants! The government encourages all those things here.

The problem in the fish industry is that there are no real small things. Everything is important. I was looking for the big things, or main things.

I would like to thank you very much for this opportunity. I really had the unique chance to visit the United States. Be sure and come and visit us again.

11.2.2 Mykhaylo Len, Krasny Oskol Fish Farm

I was absolutely stunned, because here I saw a number of species such as trout, paddlefish and American catfish. These are the fishes I've been working with my whole life.

The thing is, I'm very familiar with trout raising technology, and all that is very interesting for me to notice some specific tricks of the trade used here, especially at the pre-hatch and the spawning and hatching stage.

Well the thing is that I note that on the first farm that we went to, it was Fresh Water Farms, the gentleman who hosted us there showed us the hatching machine he is using. And it is very different from ours, because we were using a jar or machine that kept all the eggs together so that they would hatch at the same time. And it takes trout eggs about three or four, sometimes seven days, to hatch. It means if there is a disease, if one of the eggs is bad, all the others will be infected. All the larvae will be infected. But that doesn't happen in the machine this gentleman uses. Because what happens is that he has a mesh there, and after hatching the larvae fall through the mesh, thus getting separated from the others.

The survival rate increases from 50% which is what we have, to 90% survival rate. That is obviously very significant. Well the thing is that using this method will first of all increase disease resistance, and also increase feeding activity. It would keep our eggs at the hatching stage for about seven days. They will not get disease, and our hatchlings are not that active.

So he gets more fish and stronger fish. And hungry fish, eventually, which will encourage their growth. We are talking about here.

I can say I'm jealous and envious of other trout farms here, because I have been growing trout for 20 years, and there are hard conditions. For the water supply, we have to use pumps and electricity. We're not using just gravity. We have to use pumps and electricity, and given our shortage of electricity, you understand that we suffered a lot of losses.

That's what makes me very envious of the manager who works at this Wolf Creek National Fish Hatchery by the power plant. Obviously they have an unlimited supply of water.

Speaking again about feed for trout, I noticed that a lot of research institutions here are working on encouraging vegetable based feeds. Yes, I did read that it is very effective. One thing that they wanted to explore is the genetic modifications, the genetic deviations that might occur. In my practice I noticed changes in liver in trout if this trout is fed vegetable based feed. I spoke to a professor during one of the appointments, and he actually agreed that, yes, that he noted some changes as well. If trout is fed vegetable based feed, there are some possibly genetic modifications that occur, especially in the liver. That is negative.

So from the economic point of view, vegetable based feed is wonderful. One thing, and that is what we discussed with the professor, is that they need to supplement certain hormones to suppress the negative influence of soy. So they need to figure it out. This feed would be ideal for growth, but we are concerned about the economics. And I believe that anywhere in the Kharkiv Oblast we can introduce trout.

I had a chance to work in the Donetsk Oblast but unfortunately in the Kharkiv Oblast we don't have any trout farms. There are some in the Carpathian Mountains.

Like I said, both with paddlefish and American catfish, but still I noticed some nuances here such as intensive farming methods, and also high quality feeds. And another thing that I have really learned here is the indoor recirculating systems.

I think that generally speaking, I will be able to use those systems. Not for the species I saw in America, but for carp, in horticulture, actually, with grass carp or different species of carp, including bighead carp.

I am actually not going to copy American systems. They are a little too expensive. We are going to simplify them and work with them just to figure out something that obviously we can afford. But the systems provide very important advantages for us. Under our conditions, given our weather, it's very hard to raise and sell fish all the year round.

If I had a chance just to take something home from here, I would take the Freedom Feeds plant that we visited.

Another thing, I really liked the way Americans laugh. I find it very healthy. And for me, that implies honesty, integrity, friendliness, sincerity and a very good level of understanding. We in Ukraine laugh in most cases ironically or kind of tongue in cheek. In other words, there's not much sincerity in it.

My farm is located in the Valky Rayon in the Kharkiv Oblast, and the name of the reservoir is the Krasny Oskol.

Actually, marketing-wise, I certainly learned a lot from others at the Shuckmans Seafood in Louisville. In summer it is very hard for us to sell live fish. Very hard for us to store it, hold it, and sell it live. So freezing it sounds like a very good idea.

At this point I see a competitive advantage for my company in increasing the species of fish we raise. Maybe we will be able to get our competitors out of the market by diversifying the species, by diversifying our fish and providing more than they do.

Considering we have very good relations with the fishery in Donetsk, and we hope they will help us, I hope to introduce in my fishery in Kharkiv the three new species I've seen: American catfish, paddlefish and trout. Because that is something we are not raising at this point, and we will try to introduce that.

If we raise paddlefish we will be able to get paddlefish caviar, paddlefish eggs. It's what they call dual focused species – meat and caviar.

The thing is I was talking about my experiments in the Donetsk Oblast. But I moved to Kharkiv a year ago. So I was doing that in Donetsk.

Given our temperatures, we probably won't be able to raise shrimp. That will require additional heating and all the additional expenses we can't afford.

There is actually an alternative here. It occurred to me earlier to get some baby shrimp, as opposed to hatching it. But that will be very expensive, because we don't have any shrimp hatcheries anywhere near by. They would have to have a supply from the southern coast of Ukraine – if they're available. That is too far and too expensive at this point. You know, actually, if shrimp is available there will be a demand.

There are some good pictures, fresh water prawns, taken at Picketon. We had wonderful lobster encounter yesterday at Jungle Jim's.

Our climate is not good for shrimp, because in May the temperatures can drop to plus 15 degrees centigrade. Shrimp die when it goes below 15. June also gets pretty cold, especially at night. And shrimp need at least three months for growing. They're too risky.

I'm going to talk to newspapers in the Donetsk and Kharkiv Oblasts. And I will talk on the radio, as well. And there will be a meeting of our Rayon administration. I often contribute articles to the fish farming magazine, a whole Ukrainian publication. I am a frequent contributor and I'm going to submit materials.

The thing is that I do have complete freedom. I do not report to anybody at the Rayon or Oblast level as I report directly to our Department of Fish Industry in Kiev. The only limiting factor for me is funding and I'd like to say that my farm is in very poor shape at this point. That's why they transferred me there.

Actually I do have plans to achieve something. During the first year of my tenure I started raising our own stocking fish. At this point we are working on restoring the smokery that was essentially dilapidated.

And a third objective for me is to get serious about replenishing the aquatic reserves, the fish reserves, at the Krasnaskol Reservoir. Again, it has been very badly neglected and abused over the past 10-15 years.

Also I do have some ideas. I'm going to lease some of the acreage, up to 300 hectares, at my former Donetsk facility. I'm specifically talking about nursery farms to grow out catfish and paddlefish. As you know, the Valky Rayon borders on the Donetsk Oblast.

Also I'm going to increase our tillable land at this point from 106 hectares to 300 hectares to grow specifically soy, corn and barley to make feed.

11.2.3 Zinayida Kaverzina, Vesele Farm

It was hard for me to learn things in 21 days. That's not enough time. But actually, there is something that I have seen here that I have never seen before. It was specifically the indoor recirculating systems and that was one of the reasons for coming here. And I hope to start using those indoor systems in my operation in the future.

In addition to ponds we also have own land. We have some barns and sheds, and of course, you know the livestock has gone down, we do have some empty barns, and I was actually looking at the freshwater farm operation - the converted chicken coop. That is something we certainly are able to do because we have the river and we have a pond from which to get water. So that is something I will be seriously considering.

The thing is that at this point we harvest fish once a year. If we start using indoor systems we will be able to harvest it all the year around, and obviously get profits from that.

We harvest only in the fall. Actually, I have not harvested it yet so we will harvest it for the very first time this fall. We are going to invest the profit we get into the indoor systems.

That is the plan. I liked those systems very much. Another thing that I like is the feed plant at the Freedom Feeds.

You know, actually we do have a feed plant in our Rayon, which is idle. It used to serve all the collective and state farms in the Rayon, but it is closed right now. So I'm going to talk to the administration in the Rayon and hopefully they will agree, maybe to contact Dr. Miller or managers at Freedom Feeds, and there might be an opportunity for technology transfer or they would be able to provide some consulting to us.

Another thing that they really liked is the Graves County processors and growers coop. It is a great idea. If we have a coop we could deal with a lot of issues such as this feed plant. And I was also able to plan our marketing efforts. I really loved the idea that people plan their marketing and sales.

Obviously, we should have constant, regular customers – markets, and supermarkets, and restaurants, etc. But that is not easy for us, actually.

I wish there had been general manager of a supermarket on this study tour, so that we should be able to see how fish is presented, how fish is displayed, merchandised, etc.

They do not have any fish. They don't have even our fish. Those markets need to have something like a fish tank with some fish or shallow fish, or something similar. They was something I really liked here.

In the fall we will face the issue of finding a market for our products. I hope to sell our fish at our Rayon farmers market. So we don't have to go into Kharkiv to sell it. Everybody loves fish. People really like fish and appreciate fish.

I am planning to put in a closed, recirculating system. I have made arrangements with Mykhaylo Len. He's going to come and visit my farm and he is going to help me. Obviously we will need someone with engineering experience to come up with a plan for converting our fish shed to a recirculating system. And actually I hope they will be successful.

I loved Dr. Miller's systems at Freshwater Farms in Ohio. I loved the systems. The thing is, unfortunately we didn't see any fish there. The system there was down.

Another thing I liked is a lot of farmers also do fish processing. That is really super. The thing is they have an excellent marketing system here, and that is an area where we wish to grow.

The thing is we have this veterinary academy in our Rayon, but they don't have a fish farming division there.

If we have questions about what species of fish, the only place we can go for consultation is to go to the Kiev Fishery Research Institute. That's the only facility of that nature in Ukraine. There is nobody in Kharkiv who can help us. It makes it very complicated for us to introduce new species of fish. That's why you have carp and bighead carp in our market.

I found this channel catfish very tasty and I would love to have it. But it would be really scary to introduce this fish because there is no guarantee that actually it will survive, that the weather will be right, that it will grow correctly. It's scary just to invest money without any definite expectations.

And here, everything, everybody is running very smoothly, and the universities are working just fine, like Kentucky State. I loved our visit to Kentucky State University and also in their efforts to raise fresh water prawns; it takes 120 days to raise one. We think we could actually raise it in our area too, but we need data based recommendations. That is very expensive.

We have environmental specialists in our Rayon so we can set up the quality of water, but we don't have fish specialists in the Rayon which is bad. When I get back I am going to talk about that with the Department of Agriculture.

I think the government should have done something a long time ago. At the same time I should say that our markets, or sales, are lost because of competition from the oceanic water fish. The fresh water fish is more affordable for our consumers. It is cheaper, it is more affordable, because obviously people don't get paid that much.

For some reason, stores are more willing to buy frozen salt water fish. That might be a marketing issue for us, because advertising is not sufficient, it's not adequate as far as our fresh water live fish goes.

So people would prefer to buy frozen seafood than fresh, local catfish. Just to give you an idea, let's say this salt water oceanic fish in stores cost roughly 4 hryvna a kilo. At live fish at the farmer's market will be 6 to 7 hryvna a kilo. If we are able to raise live fish all the year around and sell it in stores as opposed to at the market, then the prices would be affordable and consumers would be buying this live fish all the time.

What really seems to happen is that there is an over supply in the fall. Everybody harvests in the fall, and of course the prices go down. And in winter fish is very expensive. This provides motivation for me to introduce those closed systems.

It sounds as though it would be useful to have the fish farmers in Kharkiv to band together in an association and promote the idea of buying local fresh fish. We definitely we need that and we were talking about that among our group. Actually, our study tour was very beneficial in this area, as well. All of us obviously came from different Rayons, and yet there is a need for us to band together and start promoting our products as a joint effort.

Actually, we do have an association of farmers in our Rayon, and specifically I am talking about CEI alumni Alexander Fedotov and Eduard Zhak (2001 Grain tour) who is our president.

Actually, both of them learned a lot here. His son came here, and he studied corn growing. He learned a lot. He is considered a very advanced corn grower now, and people from the oblast are coming to his farm now to learn about his methods.

I will be publishing some papers and talking with many people.

11.2.4 Lubov Izotova, Lyubava Fish Farm

I was very impressed with the closed recirculating systems, specifically with the way water is treated for heavy metal, etc., which is of course beneficial for the growth and development of fish. Another observation that they made was at the feed plant. I was very impressed that Freedom Feed manufactures up to 600 different varieties of feed, and their feed contains all the necessary nutrients and minerals for fish growth. A lot of their feed is high protein.

I was interested in raising trout, and also was very impressed with our visit to the Graves County Processors and Growers co-op. And it really allows them to reduce their costs and maximize their output. The thing is that obviously have to work together. For example, my son grows grain crops, so we buy feed from him. Okay, my brother at this point works at the Rayon administration and he lives pretty close. We do help each other, we do cooperate, we do work together, but not formally. We do not actually invest money into any joint means of promotion efforts or etc.

One thing that I really learned here was the technology of water purification from iron, heavy metals and ammonia. They have it all written down, and it is of extreme importance to us. And it is something that I will be able to use.

That will reduce disease, fish will be sturdier, and obviously the loss will be minimized. We raise carp, big head carp and red carp. So I hope that if we purify water better, we'll be able to reduce our loss from 5% to 3%. There are many reasons for losses. I am talking specifically about loss because of contaminated water. That is just one factor.

I've been working only for two years in this area, so we haven't harvested yet, so I can't give you an exact number for total losses. At this point we merely work on calculations. We don't have any hard data.

At this point we sell tickets and licenses for angling. And they have not sold anything commercially yet. We plan to sell commercially next year with the harvest in the fall.

We did have collective fisheries and then they disbanded there was a lot of decay in the industry. Then we actually had to employ several of the former collective farm specialists who had their advanced qualifications.

I understand that their education is not really sufficient, so they really need to improve; they really require training and maybe further education. I'm going to tell them what I've learned. They will be working with that.

I actually liked the two universities. What they are doing, they are studying every larvae and specie. They are really serious about their research. And that is something they should be doing in Kharkiv, so the researchers will be really studying the hatching and spawning and grow out - all the stages.

We also need good experts in ichthopathology. The people who know about fish disease and its prevention. They also should know everything about the quantitative and qualitative content of water and how to improve it. Again, not only should they know about testing or sampling water but also on how to improve water in a particular body. It is a problem. And this problem must be solved next year, or in the nearest future.

The Vodproyekt Institute actually deals primarily with geology and hydro-geology and they are experts in dam building, geology, designing, engineering kind of stuff. But we need specialist research

facilities specifically for fresh fish. And then actually when we met Mr. Yesakov, we are going to cooperate with his institution as well. So we're going to approach him and his institution. We're going to come up with our questions and problems, and they will help us develop solutions for them.

We have a veterinary academy in Kharkiv, and fishing farming is learned here. But as I just started working in this area I have not developed connections with them.

I notice that your farms in the U.S. are bigger but you have comparatively fewer people. Your scale of operations is larger, but there are not that many people at all.

They will come to hear us out at our district council meeting. Then we are going to talk at the conventions of our district Rayon farmers. We are going to talk to newspapers.

My brother Petro Kaverzin is the managing director of a state farm. But then, after coming here on a CEI Livestock tour in 2001 study tour he spoke so much about his experience that obviously people noticed him and he got promoted. Now he is district president of the administration at the Rayon level.

11.2.5 Igor Misevra, Niva Farm

Well, first of all, I would like to say that certainly we saw a lot. I can't say that we can implement everything immediately. First of all I had a great impression involving recirculating systems which are not implemented yet in our region. Also, I saw the correctness of feeding and the positive feeding. And, in general, I learned the organization of fish production.

But to implement it right now in our region due to the temperatures and climate, would be too energy consuming for us to implement right now in our country. The closed systems are too expensive because of the energy required.

What also made a great impression on me were the roads and the government that really supports the fish farmers and development of fish farming. In our country we don't have that.

Actually, we have a lot of fish farmers in the region, but many are not very developed. People in Ukraine are ready to work, and they search for any moment, any opportunity to start a business.

Well I'm willing to see the governor just to tell him about the organization. But you understand that still, it's kind of too ridiculous.

There are about 15 people on our farm. The main problem here will be financial.

You know, what also made a great impression on me is that during this tour, we had opportunity to come to discuss not with American companies, but within the group. And actually we didn't have this in Kharkiv. And so now, when I go back to Kharkiv, I'm going to change completely everything.

Well, and I am sure, actually yes. I think it's very important because communication with people in the same industry gives big results.

Well, actually, one idea which I would like to implement, I can't promise it's going to be, but I have a proposal from others in our group about future cooperation. I really like it. One of the proposals is not to grow fish, but to hold fish throughout winter. To grow fish we need to have a really high temperature. But to hold it throughout cold winter season and to sell it in the spring time will be very good.

You know, fish are very seasonable. Because from September to November it is the season and it is recommend that everybody have a fish. The prices are very low. And in winter and spring, because it is very difficult to catch fish under the ice, it's definitely much more expensive.

And what I think will be really helpful is that closed recirculating systems and harvesting in November with minimal temperature when there is no need to feed the fish. And so we could have fish for four months and we don't have to go fishing from under the ice.

The amount of fish will be the same, but definitely because we don't have to sell it during those months at really low prices we will be able to sell during the whole winter. Our profits will increase and we will be able to sell it at higher profit. The profits increase, at about double the price. And you don't

feed them during the winter. With lower temperatures, is very low, the fish is asleep. So you don't have to feed them and you pretend it is the same as being under the ice.

Certainly fish will use energy throughout the winter usually the weight decreases by 10 percent. So 10 percent is the loss in weight. For example, last autumn we sold big head carp for 2 hryvna per kilo. And the wholesalers, so they can retire, sell it for 4 hryvna per kilo.

And certainly those fish all lose some weight, but still throughout the winter, if we don't sell it at the low price, we will be able to sell fish like 3.50 hryvna per kilo. That is about a 70 percent profit.

Certainly the amount of fish our company grows is not that large, but still I'm sure that the whole research system and all the investments will be worth it.

I can only give an approximate number, because I need to do the calculation after I get back to Ukraine.

Well, actually, certainly if we are going to warm up the water we'll just go bankrupt immediately. But we are not planning to do that, and for right now, for example, I'm thinking about three things. I will have to have one pump for refrigeration and the other pump to push the water through the system, the whole circulation system.

Let me say that I am not going to grow fish in recirculating systems. It is just so I will be able to harvest the fish at other times of the year.

It is difficult to say how much investment is needed and it depends on the situation. We have a lot of farms that are not used by anyone, so we can just dig out some tanks and cover them with concrete and that will be better than if we start the construction ourselves. But for example, if I have no materials or documents for a land plot and then start construction, the cost can be 3 or 4 times as high.

In the future I am going to use combined feeding so we can get better results.

I am thinking about a mini-combined feed mill. But I would like to tell you the whole story. First we started feeding fish with grain. Then we decided it was not very profitable. So we decided to mix the grain with some other leftover products: sunflower seeds and bran. After this trip here already I understand that it is necessary to have granules here from the combined feed. Because it will be rather expensive to use combined feed for someone else, but we have the specifications. We have 75 hectares of water surface so we need a lot of combined feed there. Unfortunately I am not planning to go to Las Vegas so far.

I will certainly talk to many people. As soon as I get back I will have a meeting of our workers at the farm because I need to tell them exactly what I have seen and what to do. I am also thinking about newspapers. TV is not that easy.

11.2.6 Viktor Klyotz, Entrepreneur

I would like to say that everything was very interesting, but certainly we will not be able to implement everything right now.

First of all, I am purchasing facilities for a retail shop, but now we are thinking about processing and selling. For Example, we are thinking about a small processing plant like what we saw.

First of all, the level of our consumers is growing as well because it used to be that people working on the Black Sea and cruises did everything at home. Now we have a lot of clients who do not want to buy fish because it is easier to come home and cook the fish. So we are thinking about cleaning the fish, to prepare it for cooking.

The initial problem is that we will need to have all that documentation for inspections. We have a lot of people who are ready to work.

With the level of unemployment in Kharkiv it would easily be that manual labor is cheaper than automation. This is especially true in our case because some business is family business. We have a lot of workers who would like to work there. There are four of us: me, my wife and my two sons. We also

have a lot of relatives who would like to work but they do not have any place to work. And there are some people who only get one dollar per day.

First of all I should say it was very pleasant for us how we were welcomed here and treated very well. Certainly your recirculating systems are very interesting and I am sure in about 5 to 10 years we are also going to have these systems in Ukraine. Right now our environmental protection laws are not very strict and in some towns we have the same problems you have here in America with your rivers. It is very good that I have some knowledge about these recirculating systems so it will be much easier to implement them.

I am also very interested in growing paddlefish and catfish. So now I am planning to learn more information on how to grow them. My ponds are rather deep so it will be necessary for me to learn more.

We started last so this is our first year in business and we have just stocked the ponds. So far we have just invested and have received no profits.

I will talk to my partner about processing but the main sales outlet will be through wholesalers who come right to the pond and we can sell them right there. So that is what has been done before.

So far people just come to the farm and take home the fish. So many people come here and with all the information we got here in America we will probably have a lot of fish and we will have to do that. Then we will need to do some marketing.

I am going to do processing you are going to have to do some marketing. I already know how to do that.

We will certainly do some packaging but probably not vacuum packaging. We will sell fish fresh, but for the fish that is not taken we will be able to do some freezing and packaging. The fish we do not sell today can be kept on ice to sell tomorrow.

I have a lot of people I will talk to. I will disseminate through out the Rayon.

11.2.7 Andriy Rybakov, Private Entrepreneur

Everything I saw was very interesting and lots of people were very kind. I was very interested in many engineering decisions which we have seen at each facility we visited. For example, during our first visit we saw a very interesting hatchery where they kept the fish eggs. It was very interesting.

I also liked the combined feed mill and it was nice to see the machine to make granules. And Wolf Creek state hatchery was very interesting for me to see the way they grow trout in raceways. For example, at Graves County Processors where they grow channel catfish it was very interesting to see how they do aeration.

I got very interested in the idea of growing fish in our ponds because we can grow channel catfish. We liked the stripped bass and blue gill, but I am not sure that people will buy them.

I have two ponds with a total of 10 hectares so my farm is not that big but I can consider it as a closed system because of the way it works. I started business in 1996 and we have had some harvest.

I sell my fish through my own six retail stores and I can sell most of what we grow. We also sell wholesale since we do not have fish holding facilities.

We have a lot of advanced technologies in our country, but right now the demand is different. For example, it is much cheaper to bring trout from Norway than to grow it here in raceways. That is amazing since it is a high cost country. Temperature there is not so critical since the temperature there is not too cold and not too hot. In our climate it is difficult to grow trout. Maybe the Gulf Stream helps.

11.2.8 Gennady Ryanskyy, Izyum Fish Farm

First of all, some of the technologies are very interesting and are yet too far away for us but at least we need to try to implement something.

First of all, the recirculating systems and the technology are very interesting but there are certain

calculations before starting.

It was very interesting for me at Shuckman's food where the processing and small smoke house. On our farm, we have some smoking houses but the level of technology is much lower.

We can implement many things and start working. Again, on this farm with the recirculating system, I am thinking about implementing that. Later on, we can start growing trout but certainly it will take time. It will take at least 1 year to do everything and have a good quality. We already have wells but we need to oversee reconstruction of those.

I would put carp in them. Of course and it depends on the season and with the new system we will be able to grow carp all year round.

That would be profitable no doubt, because right now fish is rather expensive.

From the initial project from the design to completion I think it will cost about 100,000 hryvna. That is less than \$20,000 because we already have those tanks to modify. It'll be even easier to grow here because there's no poaching.

We will be able to sell all the additional fish and we'll only need 1-3 people to run the facility. Right now we have 75 employees.

I will be able to double his sales if I have a recirculating system. It will actually increase sales because in open ponds we lose a lot of fish and having a recirculating system will increase the amount of fish by 100 to 150 tons.

Birds and poachers are a problem although we have 6 people guarding one pond. Maybe the guards are stealing, but currently only one fish at the end of their shift. You only know about the losses in the fall when you harvest the fish. The amount poached is insignificant. We still sell 100-130 tons of fish a year currently. So with a recirculating system I will be able to double my output. So there'll be extra cost of energy but the decreased losses will double his sales.

In our case it will not be too expensive since we already have a well where we can get water. The number of guards and employees will also drop dramatically.

There were a lot of ideas and impressions and everything seems so great. I have to think things over.

Please come and see us and we will fry you a really big fish. And with a joint venture we will be able to implement such a system easily and quickly because our facilities are three times as big as those we saw in the U.S. So in the winter nothing will freeze. Earlier it was a pig barn with 5,000 pigs at one facility so you can imagine how big they are with concrete tanks for that number of animals.

We can tell people that they can even grow fish in the bathtub.

This year we did not profit but we managed to pay off all the debts and currently, we don't have any debts. Considering land, water, wages and taxes, well, if we had an investor we could renovate right away.

Revenues are about 80% of wages because people are receiving really good wages.

11.2.9 Oleksiy Chernenko, Regional Administration

First of all, everything that I saw and learnt here was rather new. Everything is different from what we do. With the technology, the combined feed ratio for feed to fish is 1.5 to one and now it is 3 and more to one. It was very interesting to learn that. Certainly we are not going to implement everything as soon as we get back because we need to calculate and develop a business plan to see how things will work there. For example, I have to speak to the other people on the farm about their interest and I can say that paddlefish are of great interest.

Regarding a recirculating system, at this time, if the fish is not of commercial size, it won't be profitable for us but at the moment the system can be used for holding fish and growing them to size. Besides that, our schedule was so full that we could have stayed at one place for 2 or 3 days. For

example, the Kentucky State University was very interesting for me where they were researching fish and it was very interesting to me and I would like to touch everything and do something myself. It would be very interesting to others.

Our department is a part of National Department of Fish Protection and Fisheries.

The main idea I got was to sell more fish and that's what we're going to do. I think more fish would be sold because people are interested in paddlefish. They're huge fish that grow in ponds. They're black and the meat is very tender. The eggs taste similar to sturgeon caviar. With a new system we can exchange growing of paddlefish for bighead carp because the conditions are same. Farmers will be able to earn more money because paddlefish is more expensive. Besides, growing this variety of fish will be easier when dealing with the competition because right now everybody grows bighead carp.

The food conversion ratio that people talk about and a one to one ratio means that for one pound of fish needs one pound of food. In Ukraine, for one pound of fish, you need 4 pounds of food, so it's twice, nearly three times as much as in America. In America, 2 to 1 is considered very bad because too much money goes to feed.

It also depends on the amount of protein in the feed. Here it is 28 and over. For paddlefish, the amount of protein should be about 40%. When they did some tests in Kharkiv, they found out that instead of 24%, which is the standard for Ukraine, it was less than 18%. So, we wasted money because fish do not grow.

Obviously, if they get the ratio down, the profitability will increase, and certainly the time to harvest is also shortened. For example, in Kentucky, they grow paddlefish like a poly culture. In our country, we can put catfish instead of carp, and the time for production would not be more than 18 months.

Paddlefish take 18 months to grow to get market size of about 2 kilos. To get caviar it takes about 10 years. But in our conditions to grow paddlefish caviar we should use some water reservoir which we do not have. Some people from this group are already thinking about growing paddlefish by putting it into a pond and if it survives, that will be good.

Right now, the way we grow carp is that we take a 3-year-old fish which is about 200g and during the third year from spring to autumn, it grows to 1.5 kilo, but we'll be able to have bigger fish about 2-2.5 kilos in about 3 years. But to find out how carp will grow with better combined feed we need to do more research.

We can get the eggs for the paddlefish from a farm in Kherson that specializes in growing only the sturgeon family.

People in Ukraine are afraid to try something new and want to see the real live example. And besides, it is necessary to do some marketing so people can learn and do the same. People need to be educated about paddlefish.

There is something that the government can or should do. The people have to be able to go somewhere and see the fish. It would be even better if they could see the fisheries.

Besides that, I am also working on a research project together with a national team and I am writing the section about fish farming. It is kind of a market plan for the Kharkiv region ordered by the Kharkiv Regional Administration. And so I am writing the report on fish farming in the region and this report will be used by all the officials in the local administrations. And I am planning to include sections of the technical report I am writing. So these people will also learn about our tour.

Yes, I'm going to write a report on fish farming and this report will be read by all the heads of local administrations. I intend to include a technical portion in my report. I will write my impressions in an overview about fish cultures in America and I will share all this with you. It should be complete in November.

The difficulty in growing shrimp is controlling the water temperature. In our climate they do not grow well. Although it's an interesting idea, at the moment it's too expensive and not economically promising.

11.2.10 Oleg Lushchyk, Ukrainian Eastern Fish Co.

First of all, I'd like to thank you that I was a part of this group to learn what's going on in America but we already know what to do and I'm not a grower, I'm a processor. But before this trip, I thought that growing fish was similar to growing chickens which is very fast but in America, it doesn't grow that fast at all. I used to work for an Asian company and their technology and growth time is different there. But at this time I don't have the need to learn about this since I am not yet interested in growing fish. The main portion of our company is imported fish products. Certainly, it would be really nice for Ukrainians to purchase local or Ukrainian fish but right now, the fish is not grown that corresponds to our demand. I think that in Central America we had the same problem when we started growing catfish and tilapia.

I did learn about smoking houses and I bought a temperature gauge. What was most interesting to me was the selling of the fish itself because right now there's more e-marketing and email. I thought it would be impossible to do with fish. That is based on trust.

It was also interesting to learn about co-op growing. It's very easy for people to do and by joining their efforts they manage to do a lot of things, for example, federal financing. Secondly, it was much easier for them to get loans from banks. By joining together, they can get federal financing from the decrease in tobacco farming and to increase the growth of fish and other agricultural products. Also, we know that the worldwide fish population is declining, fish farms are important because a growing human population needs fish.

First of all, I'm really interested in a cooperative because it would be much easier for me to communicate and to purchase fish from local farmers but unfortunately the fish that's grown is not good for my profession. In my situation, we have a loan from the bank, but the people need farmers to diversify what they grow because otherwise I can't do anything. For example, all together the Kharkiv Oblast produces only 1,200 tons a year that includes everything but every year, our plant buys 12,000 tons, which is ten times as much.

The Ukrainian government watches foreign purchases and growing local fish would be helpful because Ukrainians would certainly be happy to purchase local fish. We purchase about 5 to 10% local fish compared with our total fish purchases.

Nothing can be done with carp. Carp can't be frozen, can't be processed and it has a lot of bones. It can only be served fresh and fried immediately otherwise it has to be thrown away.

Well, if you ever do another fish tour I would like my marketing people to come and see how it is done here. America is very knowledgeable about marketing and it's good to learn about the marketing of the fish here.

It's easier in America because a lot of Americans live close to the ocean. Also, Americans pay more attention to other industries since agriculture is not the leading industry. They can import from other places such as China. Besides, Americans are very concerned with growing because they realize that soon there won't be enough fish and the technologies will pay for themselves. In Ukraine, the people probably eat twice as much fish as Americans. The main market for imported American fish is Eastern Europe.

This tour may help our sales or increasing our sales or improving our profits. I can't say exactly where it applies to me right now but I travel to any country to learn something and that's why my company is advancing in many ways. I travel a lot and try to see other concepts and I tell my managers to do the same. Any knowledge about production and marketing can help us. We take all the concepts and see how it can be important for us. I try to look at and consider as many ideas as possible in order to

compare.

Well, I am interested in growing catfish and tilapia but right now, but none of the companies provide reliable figures on the profitability. It's not possible with any of the companies so it's difficult for me to compare with how America grows the fish.

My processing plant will be very interested Archer Daniels Midland. I will talk to my company about getting results. They can control the temperature of the water but it's in a very small, but compact grow-out area.

It might be good for Japan but right now, the Japanese are very interested in fish and they buy everything and in some economies, agriculture is more important than oil. Those people companies in fish companies are very rich. When I deal with the Norwegians they say: hurry up and buy the fish, or otherwise, the Japanese will buy everything.

11.2.11 Yuriy Merson, Pechenegei Fish Farm

Well, if I said that I would implement everything I wanted to do, I don't think I would be very objective. Right now I need some time to think things over and to calculate to see how this can apply to us and then we can start implementing something. For example, this is our second year and we are increasing our brood stock of catfish. By now, we have 100 females and 168 males, but it's not like the American channel catfish. We have a different kind but next year we will start with some fry.

There have been a lot of changes that have been implemented already. In 2001 we harvested 152 tons and in 2002 it was 753 tons. Next year the market price could be 736 market price which we sell.

Our ponds are very shallow and we intend to make them deeper, and certainly, we still have some weeds. That is the character of the farm. The total area of the farm is 1,160 hectares of water surface and we need to clean the pond. For 33 years there was no cleaning, no maintenance and every year, we have 45 meters of silt on the bottom. We did manage the reconstruction of only 4 of them.

Before, the company used to hire some others to take the birds out of the pond. This year, we do it ourselves and at certain times of the year, we have special help but now, we've got rid of them. Besides that, we have different kind of seagulls and they don't scare easily.

You know, I'm really interested in growing catfish, but again, this is a lot of information so I just need to sit and think about everything, such as production and marketing because I also need to be able to sell the fish. Well, I don't know if you have a problem in America as we do in Ukraine that we need the support of the government. It's very difficult to achieve something if you don't have official support. We need the support of Federal government to do that.

Actually our region is unique because we have agreements with the Kharkiv National University Biology Dept and the Institute of Fish Farming. So we do have some contacts.

Well, for example, last year, out of 540 tons we sold 228,000 pounds at retail. The rest sold was at wholesale. Besides, part of our products we sent to Odessa.

It was very interesting to see how they used using liquid oxygen as well as some combined feed. For example, at Freedom Feeds they showed us the combined feed with only vegetables and it was very interesting. We discussed it a lot and we're interested in buying this combined feed but only for grow-out fish. It won't be used for feed for brood stock. I already have some ideas but I just want to try them out first.

Certainly some things were more helpful than other things. Not everything is good. Besides, there are as many people as there are many opinions. Well, I need to compare my notes with others in the group.

What I'm planning to do, I plan to accomplish within 6 months during the winter season and I would like to show you what I've done. It will be good for you to see the final results. You also have to understand that in the winter we will have more people to start the project.

11.2.12 Roman Babenko, Neptun Ltd.

Well, certainly, I liked some things but right now, you know, it's very difficult to say what we can do right now. We need to go to my farm. I need to tell them my ideas. Besides, we already know where to get this kind of information and we have email addresses of those who can provide more necessary information. Well, certainly, you now, I think the main thing which will impress some and in some way will shock some is the way the State is concerned and helps the fish farmers such as the hatcheries and the stocking the local rivers. We have nothing like that in our country yet. Besides you know, it was also very interesting to see the new ways of the professionals, equipment, and systems.

Also, for example, processing is not easy for me. We try to do some processing on our farm. You know, it was really surprising again for us, is the level of equipment which was bought from Germany and they told us that if there are any problems, the Germans can go on-line and fix everything.

When I go back, I want to talk to the President of the company about processing and we want to consider every opportunity that we saw in America and use that in a way that can help us.

Well, so far, we have 200 hectares but some ponds are not used because they are leased by other farms and I don't know if we are going to take them back.

Well, I can't say exactly what went wrong in the past since I did not work there at that time. As far as I know, when they made the first calculations it seemed to be profitable but when they started to do smoking something went wrong. I don't know exactly. I'm not sure.

We didn't have too much variety of fish at the time because we try to grow more bighead carp because it's natural here. Besides, ours specialty is fish production, not processing.

The mechanized feeding equipment was very interesting and useful. I was also thinking that it would be very useful when growing fish during the winter.

Well, at first, with all this new information, it seems easy. But certainly, there are a lot of ideas that we can consider doing.

I saw things that will help improve the amount of fish that you could produce per year. The main ways will improve the amount of fish. For example, we were very interested in the combined feed from the Freedom Feed Company. It might help. But again, there's a lot to consider. For example, how is it possible to buy the fish feed?

When I go home, I will tell them what happened each day, day by day, you know, what I saw, what I liked, what I did not like, you know and then just start thinking about that with the whole group. Especially, what I would like for them to consider the poly-cultural study of catfish and also, the introduction of new species, like paddlefish.

There any kind of investment required to make that kind of decision. If it is a well-grounded idea, we will be able to find investment for that.

Well, our farm is in contact with all the local fish farmers and first of all, they all know that I went on this tour so even if they don't contact me themselves, I will have some meetings and give them the information.

11.2.13 Yuriy Golub, Scientific Production Center

I have seen a lot but to know if I've learned something, we need to put those ideas into practice. Theoretically, I will be able to tell you what I've learned after maybe 6 months or even a year later. Theoretically, I did see paddlefish and learned a lot about paddlefish feed, etc, but I can't tell you what I've learned until I've personally participated in the fertilization of paddlefish eggs or in raising paddlefish myself.

Like most of our group, I was impressed at Ohio State University and Kentucky State University with the paddlefish management and the idea of raising channel catfish and paddlefish together. The thing

is that we actually won't be able to raise channel catfish because our country's temperature is different but we can still use polar-culture with paddlefish by replacing channel catfish with carp. Again, my company also provides research on different bodies of water and different feeds and comes up with suggestions and recommendations for Kharkiv farmers. I can tell you that most farmers are fed up with bighead carp and paddlefish is actually an alternative. Also, before this trip, we were about 75% sure that paddlefish would be a good alternative to bighead carp. After hearing everything and getting all those materials, I'm now about 95% sure that paddlefish will be a good investment. I had discussions with the other members and we're going to study the fish culture in detail. Specifically, I'm going to put about 100 paddlefish in a cage, immerse those cages in a pond and study their adaptability and survival through the following winter.

We're going to put about 15 in a cage and use about 5 to 6 cages. We won't know until we try it. Let me tell you about the experiment we did last year. We took a pond with about 130 hectares. There was a certain risk there since nobody had ever raised bighead carp there. Instead of stocking it with 100,000 fry, we put in 1,000 just to make sure the conditions were right. We noticed that the growth rate was about 10 times because in about 4 months, they gained weight from 300g to 3200g. So this season, we introduced the required stocking rate of 100,000 fry and we're going to do the same testing for paddlefish.

We can start with paddlefish on an experimental basis. I have some part-time employees who also teach research there at the Veterinary Academy in the ictology department who are working on their doctorates and studying paddlefish. They asked me to bring back as much literature and material from here. Also, we've gotten approval from Kiev on the publishing of a textbook on fish farming for the college students. I'm going to suggest some revisions to the paddlefish chapter and provide more materials for that chapter. They're also going to use the information I got on shrimp farming for raising crayfish, because there are a lot of farmers who would like to raise crayfish commercially as our environmental conditions are very good and practically every pond has some crayfish. So we're going to use the shrimp ideas for crayfish. Again, I would like to spend one day doing very hands on things like working on practical things with paddlefish like hatching, putting hatchlings from one pond to another and feeding them. Just doing things myself

The thing is, although I am the general manager and I am responsible for all the legal work. I do have hands-on responsibilities all the time, such as sampling water all the time so pretty much nothing happens without my participation.

I tried to focus on 2 main areas, specifically, paddlefish and crayfish. For crayfish, I'm going to use the shrimp technology I learned here. I did not want really to go all over the place and have to focus on too many things because I really want to concentrate some pivotal ideas. Another idea that I have learned here and need to do further research on is to use the settlement ponds at power stations and to use them for hatching fry. Speaking about species, I'm tempted to name tilapia as a possibility which is probably less realistic, but definitely paddlefish.

The thing is that during the egg hatching period this process can only take place when temperatures are roughly 23C while the water temperature is from 18 to 20C. The thing is that if we use artificially heated water, while the ambient temperature might be 15 degrees, the temperature in the water may be 22C. What will happen if we reduce the hatching period and increase the grow-out period? For example, in a month and a half; the gain weight is roughly 500g depending on the heat. At this point we go to the Crimea which is 700 to 800 kilometers away and we collect the larva there. So then they put the larva in our ponds to grow out in a month and a half and the weight gain at this time is roughly 500 grams, depending on the heat. If we are using warm waters, we need to go to the Crimea.

Another thing that we saw here is live fish haulers and that is something we can easily do by putting tanks on trucks and also adding oxygen tanks. And that is something I can do to haul live fish. At this point we transport our live fish in plastic bags of about 50 liters. We fill the bags with 1/3 of water,

put in the baby fish and pump in oxygen to fill up the remaining 2/3 of the bag. Then we tie the bag together tightly and we can haul the fish for up to 12 hours.

I'm also looking for alternatives to the coal-powered station and I'm looking at water as a source of energy by installing mini hydro power stations and that would cost upwards of \$3,000 and can be manufactured in our plant in Kharkiv. Another alternative is to start using windmills and solar energy. Again, to use gasoline and diesel to power plants doesn't make any economical sense for us but we certainly can try natural resources.

There a big market for crayfish and it is actually the second most expensive fish after the sturgeon which sells for 43 hryvna/kg while the crayfish sells for 25-30 hryvna/kg. The crayfish market is huge and can be very profitable. For commercial harvesting of crayfish, we get permission from Kiev because they've set up a quota. Also, they determine the tools that can be used for harvesting. I do have permission from Kiev to catch up to one ton in Pechenegei of the long pincer crayfish. Amateurs can catch up to 3 or 4kg.

Nobody actually studied the crayfish market but according to my observations, there is always one or two vendors at each farmer's market who is essentially a poacher, selling 50-100kg of crayfish on a daily basis, not counting the deliveries that are made to their different restaurants, cafes and beer joints where they sell one crayfish for roughly 1 to 5 hryvna.

The vendors would sell 50kg of crayfish wholesale which is 20-30 hryvna per kilo. Of course when it's warm it is easier to dive for crayfish and the prices drop to 10-15 hryvna/kg. When it's cold, the prices go up.

To figure the market size, you would first have to figure out how many markets there would be in Kharkiv. For example, if there were 12 markets and maybe the larger market has 5 and the smaller markets has only 1. So, we'd roughly have 100 vendors in the oblast. It also depends on the area where there are more restaurants. The paradox is that while everybody buys crayfish, nobody knows how to raise them. The market is immense.

There should be a law against harvesting crayfish during 4 or 5 months because it takes a while to incubate the eggs. There are poachers all the time. Still, there is enough crayfish for everyone. OK, if there were 300kg of crayfish in Pechenegei during the season, I'm going to pick out females with eggs and then I hope to hatch them, although we're really not allowed to catch females, still I'm going to try it. When you come to Kharkiv I will take you to different markets to actually get a picture of this crayfish situation. Actually nobody has done any market studies but everybody knows the market is there and it is not being tapped by anyone.

11.2.14 Volodymyr Yesakov, Kharkiv Vodproyekt Institute

Well, we also try to get as much printed materials because we can learn a lot more from that. It was very interesting to see the experience of the last farm we visited, especially for me, where over 50 farmers united to create one farm. Besides, they didn't invest everything into this one united farm but only part of their capital in such a way they don't risk all their benefits. And besides such a farm, it allows them to have stocking fish of really high quality. Besides, each of them doesn't have to worry how to sell the fish. At the same time, the expenses of the cooperative farm were covered. Also it was very interesting to see your research institutions. Certainly, we can learn a lot if we keep in contact. It was also very interesting for us to see the combined fish plant because I have not seen anything like that described in the literature yet. It was very interesting to see those technologies where the amount of protein is about 80%. Well, according to our preliminary calculations, their combined fish is not much more expensive than what we have in Ukraine. We hope to be able to cooperate with them in the future. They did not want to share their technology with us. Doctor Miller's at Advanced Agricultural Technologies in Indiana was also of interest to me. I haven't seen anything in the literature about oxygenation. At his

farm, he does it without any electrical energy because of the difference in height and diameter and the creation of a vacuum with hydraulics. It was also interesting for me to see his hatching or incubation device. All over the world and actually on some of your farms, I use the same types of devices. All of the fish eggs are in water at the bottom of the device and the oxygen comes from underneath. Also it was interesting that the fish eggs were on some kind of net and this net was on the surface of the water so it could mix with the air. Then the fish eggs have more access to oxygen and the eggs will be colder. Unfortunately economics and climatic hydraulics differ from our country. For example, your annual precipitation is from 0.8 to 1.2 meters per year and in the Kharkiv oblast it ranges from 480 millimeters meters in the south of the region to 522 millimeters in the north.

CEI: I am just wondering what area of the U.S. would be comparable. As you get further south, there's much higher rainfall, perhaps in the southwest, Arkansas, Oklahoma, but the temperatures would be very much hotter. Cincinnati is perhaps a reasonable compromise. We're wondering if the tour should have gone further south or further north, but rainfall wise, perhaps it'd be Washington, on the western side of the mountains. My conclusion is that Louisiana is probably too warm

Besides, we have a large amount of underground water, plus a high level of precipitation. Yes and it is average annual rainfall including snow fall. Talking about underground water and rainfall, it creates the conditions for fish because actually in the Kharkiv region since the middle of the last century, there was already a problem with water and we've been feeling the deficit of not enough water. By the end of the last century we already felt the deficit of underground water. Now it's necessary for us to get water for fish farms from wells that are 35 to 300 meters deep. Here, the wells are deeper. Well, I see two ways for the development of local aquaculture in the Kharkiv region. First of all is huge usage of water for fishing, agriculture and industries. Secondly, for the development there is certainly more investment required. There are more consumers and more expenses but everywhere the situation differs. Also, just a few days before coming to Cincinnati, I was supervising the issuing of a tender to construct, design a channel between two rivers, the Kharkiv and the Muha. We have also many problems such as environmental protection as well as the protection of landslide from the forests and money is provided for that. Besides, after maintaining the river, we will be able to construct forms like we saw in America, along the border on the banks of the river and they won't be too costly. This program will take about two years and this year and we have already received the 220,000 hryvna for the design. On the Muha River the work will be done in stages. This year we will be working on a part of the river between two bridges about 3-4 miles long. Before coming to Cincinnati, I talked to some farmers who work in that area and they're already in agreement that the project is going to be financed at some point. It's highly probable that this project will be well-liked. This pond can be a size similar to the one in America. It will be possible to grow various species of fish, including those species which are grown in this area of the U.S., perhaps even some trout, bass and paddlefish. I can't definitely say that we will do that even though the amounts for the materials will be cheap, we can't make the final decision right now.

11.2.15 Mykola Bez Korsyy, Novovodolazhsky Fish Farm

Although I've seen a lot, I can't say I've learned a lot. I would like to learn a lot. When I was interviewed, I was primarily interested in three major areas: paddlefish, culturing technology and crayfish and trout. I am very glad that Jeff included those things into our program. Considering there were 16 participants in the program, it was surprisingly that he covered exactly my three areas of interest. Fish farming differs from grain cultivation because you deal with fertilizers, etc. For us, a more refined approach is required. Ninety percent of your success and profit in fish farming actually depends on the stocking material, the fry, which you get. If I had been you in an agriculture program, I would emphasize more the hatching and basically, the cultivating of fry because it's not that difficult to raise market size

fish. For us, for example, 4 or 6 participants would have been adequate to study the paddlefish culture. I personally, would be very interested in immersing myself in the whole process. And another couple could concentrate on trout. I'd like to mention that Mykhaylo Len and I have developed 2 programs, based on our observations during this study tour that we are going to implement. But more research is required. We will need eggs at the early stage, using James Gray from Wolf Creek. I think there are 3 people in our group who will be able essential to further develop this program but I don't want to be the one to conduct this. For trout cultivation, the water resources require a 3-man team. At the next stage, we'll be able to farm paddlefish but that would have to include the hatching stage. I can't say when it will happen; I can only say that it is supposed to happen. Actually, on a couple of occasions I had a chance to travel to the Krasnograd region to study their paddlefish cultivation technology because where I live we are pretty much happy with our volumes of carp. Since we've have excellent results, we looking for alternative fishes and more interesting for me, but then this union disintegrated and there were doubtful economics that was pretty much the end of my efforts.

Shipping fry from Wolf Creek to Kharkiv is not a problem. Not, if it's shipped in small boxes and it's only very important that the box isn't opened in transit. Everything depends on our mutual desire. As far as paddlefish goes, there'll be appropriate groups comprising 2 or 3 individuals who will come here to work hands on with paddlefish and go through the whole cycle. Another interesting appointment was with Eric Shaffer at Freedom Feeds. They did not disclose their formulas but they're entitled not to do that. The University of Kentucky is studying the impact of changing feed on the immune system of fish. So, metaphorically, it's like training a dog to eat grass instead of meat which is very interesting. I'll stay in touch with him since I have Boris Gomelski's e-mail address because I'm very curious about the results of his investigation and that is something we should implement. The thing is that in fish farming this approach doesn't work because what happens is that our of hundreds of budding farmers, in a process of natural selection only a few will be able to remain. Obviously it is the survival of the fittest and I can tell you from my own experience, and I've been doing this for years. And it is important that those survivors should be thinkers as well. Actually I think that the work done by your Center in terms of agriculture is a big plus for the Kharkiv oblast. It would be advisable to have a map showing our itinerary and the route with all the places we visited.

That is actually for the public at large, because the people in my rayon were very intrigued how Americans invited me here. It is really amazing how the government and universities support education on the part of farmers to teach them how to raise different kinds of fish. That is something that our universities and government should be doing. Also, during one of our last appointments at Graves County Cooperative we learned something that certainly should be implementing right now in Kharkiv. It is a burning issue. If we summarize everything, all our learnings are basically things we could do in Kharkiv. I can name all kinds of things including marketing and processing and up to 10 different ideas that we can be successfully implement in the Kharkiv Oblast. For example, Oleg Lushchyk imports 12,000 tons of fish every year and that is something we could successfully produce in Kharkiv, but the important thing here is to follow the technology, not to do things in a slip shod manner, but to follow them to the top. This is actually a big plus to you and your vice-president, Iryna, Jeff, Sasha and everybody we met at CEI. Basically, everybody has his/her responsibility while working on a team and the mission was accomplished.

Actually, at the Wolf Creek Hatchery I saw this jar hatching device there and it was so interesting because it was on the surface. We tend to look for complicated solutions. The solution we saw was very simple and very accessible. It was great and it was simple. Also, when we visited Kentucky State, I was very impressed that there was a researcher from India was working there. My understanding is that the living standards in the U.S. are so high that it has time to train an average citizen to consume more expensive species of fish, including paddlefish. The government is thinking about the Asian competitors

from the market, or the government must think about this, not some farmer.

I need to come here again to learn more about paddlefish. The entire group needs to return. It's not easy to start raising trout and then switch over to raising paddlefish. We can't just talk and hope things will get better. There's also research. And then we will need to find an artesian well to pump water out because we cannot really use our electricity for that and that was one of the reasons why all those trout farms have gone out of business in Ukraine. We need to set up the facilities and then we will need fish eggs.

11.2.16 Yuriy Kryvosheva, Bohodukhiv Agro-Fish Cooperative

Well, I am now mostly interested in growing trout. This is a new interest. Because I see that on my farm, I will be able to implement it.

I have a reservoir which is 350 hectares. When we went there it was up over the hill and we saw people ice fishing there. You should see it in the summer.

In winter the most important thing is the oxygen. High temperature is not good, I mean above zero in the winter. Trout should have cold water instead of warm water. For example, the reason why Wolf Creek was able to grow trout was because of the power station which takes water from the very bottom of the reservoir and it is much colder there. It's best to grow trout in cold water.

Which is why trout prospers and does well as you go further north to Michigan and Canada which has year-round cold water. Well, it takes finances to get into the trout business. First of all we need to buy fry. We will start when I get back.

Well, first we need to look at our operation, make some calculations and think about everything. Actually, it was interesting to see the entire process of growing fish up to selling fish.

First of all, for example here, we saw that here, with fewer people you can grow more fish. In our country, the whole structure of the labor division is rather massive.

Your technology is more advanced than what we have. Re-circulating systems are of interest. It is in the far future. We still have a lot of open ponds.

First of all, it was interesting for me to see the ponds, their design and learn how they were made. In some ways the last visit to Wolf Creek coincides with my farm because my farm grows those cultures. It was also interesting to see all those relationships between farmers and producers.

It is high time to start some sort of association. Maybe we can now start a fish association.

When I get back I will get everybody together and talk to them. That's not a problem because I am on the City Council and am the head of the Commission on Land and Environment.

11.3 Livestock Production Study Tour

11.3.1 Yuriy Ryabokon – General Director, Agroimpex Private Enterprise (Poultry Industry – largest turkey farm in Ukraine)

- It was amazing to see only one person servicing 10 broiler houses (Park Farms). I see that I have to reduce costs substantially and not rely on subsidies. The subsidies will eventually go away and we need to learn to survive without them. That way we can become self sufficient and better compete outside Kharkiv.
- My number one priority will be to try to organize a trade association. We need an association of poultry breeders. Mt. Healthy Hatchery, Park Farms, and even Tyson are members of associations that help them progress and represent them in government. In the US associations are set up to engage in business (MMPA) as well as lobby for laws and this could benefit our industry.

- a. Cross-Zaria will start production facilities as part of the association in order to help control supply and maintain a profitable price structure. There will be three sectors covered with lots of automation (like Tyson).
- When I return I will serve as Director of Poultry Institute. One of my first objectives will be to try to get the type of lab equipment we saw at ODA and the universities. I estimate it will take six months to achieve this.
- I plan to build two more poultry houses. This will further expand our turkey production. They will be patterned after the ones I saw in the US – much more productive than existing poultry houses.
- Increase capital expenditures next year in order to automate and reduce headcount.
- I plan to disseminate a lot of the information I've gathered from the tour:
 - b. I've already written two articles and now that I've been part of the MTM Tour I plan to write another. The new one will be on the importance of quality control. Everywhere we went the quality controls were excellent and employees followed the procedures without question. I believe the random testing in the US helps enforce the follow-up.
 - c. I will publish a book on poultry farming based on my visit. It'll change a lot of ideas about mass producing poultry – as you say “economies of scale” are needed to be profitable.

11.3.2 Oleksandr Pakhomov – Solonenske Joint Production Cooperative Agrofirma, Chief Veterinarian

- We have to improve the living conditions for our cattle and hogs, increase the quality of the feed, and increase the acreage for corn.
- I really loved the interface between science and farmers – Purina Mills, OSU, ODA, UK, and especially ADM. We need similar cooperation in Ukraine.
- Ukraine needs associations like those in the US. They protect farmers and increase the stability of pricing (MMPA). I will share the concept when I get home with my general director and other rayon officials.
- In the US farmers own their own land and it results in higher productivity. We have 1,500 cows and I will suggest breaking the farm into smaller units. Each farmer will be responsible for results and profits. They will share 50/50 in the profitability of the farm – just like a cooperative (MMPA).
- We will focus on breeding and care of cows (Mohrfield). We will select the top 100 cows for breeding to improve the herd.
- In the US, electricity runs about \$350/month, in Ukraine about \$3,500/mo. We will implement programs to reduce expense by 30% in year one and 50% in year two.
- We will improve the feed to 300 cows to increase milk output (from 700 current milkers). Our new mixture for feed will be 30 kg. silage, 12 kg. haylage (up from 8 kg. now), 2 kg.-3 kg. special mixture (60% corn and soy) per cow per day. We expect output to increase to exceed the output from the 700 cows milked today.

11.3.3 Yevgeniy Darmo – Director, Zlagoda Private Agricultural Enterprise (dairy farm)

- Have 300 cows. We will use embryo transfer (Mohrfield) to replace herd quicker than artificial insemination (AI has questionable quality in Kharkiv today). Based on Mohrfield experience they get 50% (actually 80%) success versus Zlagoda's 20%-30% using AI. We can replace the herd in half the time if we use embryo transfer (need to acquire the skill).
- The plastic bag storage method for silage would be a huge benefit to our farm by reducing losses by more than 25%. As soon as we have capital for investment we will buy the machines and bags to do this. Our present process consists of digging pits 20 meters wide with a 3,000 ton capacity.

The top 15-30 centimeters and the bottom 15-30 centimeters rot before use. We can avoid having to purchase additional needs (25,000 – 30,000 UAH/yr.).

- I will convince Zlagoda to reconsider corn and soy. We grow neither at this time. Based on what I saw in the US and the productivity increases we can get from our cows we could greatly benefit from increasing corn and soy in our feed supplies. We will try 50 hectares next year as an experiment to see if we can grow soy. Soy prices are stable and profits are high. Our only problem is we don't have regionalized seeds like you do in the US.
- We will purchase the metal storage/drying bins we saw on several farms in the US (Knigge). At present we pay 50 kopeks for each 1% of moisture reduction/ton, 13 UAH/ton delivery, and 20 UAH/ton shipping. Plus, we have to fund our own hauling. If we owned our own drying/storage facilities like those in the US we could really save lots of money and improve profitability. We can save 15% (47,250 UAH) by drying our own and if we can lease the equipment it would be a 2-3 year payback.
- I want to purchase a machine to inject manure into the fields (Knigge). I will ask the Precise Machinery (Donetsk) to build one for us (sales rep from Precise coming on equipment MTM tour).
- I learned to harvest alfalfa at its budding stage (Knigge). It is an extremely valuable feed and at the budding stage we usually let it rot so this would be a 100% return.

11.3.4 Vadym Plotnyk – General Director, Prometey Agricultural LTD. (dairy farm)

- This trip was a real eye opener. I have numerous plans for implementing so many things – I wish we could afford to do it all at the same time.
- I will purchase the baggers and plastic bags for storing haylage and silage. I was skeptical when I saw this in Ukraine but seeing and talking to farmers that use them has been really valuable. We lose \$20,000 US every year in livestock due to feed. We can eliminate nearly all of this.
- I will partner with Rovchak to grow pedigree cattle. I have 10 cow barns that are empty and we can start a whole new herd. We saw the results that can be achieved on every farm we went to in the US. Even the small farms (Mullins) kept top quality producers and didn't mix breeds. Because the livestock operation loses money we sold our cows prior to coming on tour (averaged only 4 liters per day per cow). We can break even at 12 liters per day and can make money at 15 liters per day (US gets at least 30 liters per day). We don't have to be as productive as Americans to make money and become more competitive – but we do need good prices from the processors. With the planned growth of a pedigree breed, we can use the cash flow from the livestock to pay expenses until the crops come in.
- I will plant soy next year. It is such a valuable crop for feed and it brings in 300% profit. I don't know why we've avoided it for so long. We can use it for a cash crop to off-set the cost of what we feed to our cows to increase their production. At present, our livestock operation loses money and our crop operation produces a profit. The added soy will generate 150% profit after we pay the taxes.
- We have 1,600 hectares of arable land. We currently spread manure on 200 hectares and use synthetic fertilizers on the rest. Wealthy farms put manure on fields once every other year and the poorer farms once in seven years (diesel fuel too expensive to haul it to the fields.) So, it all sits in piles until who knows when. A system like Knigge's would allow us to use the manure more efficiently and reduce the environmental issues we are now facing.
- We WILL start an association when I return to Kharkiv. At present Kupiansk Milk Plant acts like a monopoly controlling the price of raw milk in the rayon. Its head is also the chairman of the national association so little gets done for the small dairy farmers. If we can create an effective

association we can significantly improve the rate farmers get for their milk (1.1 UAH versus 0.55 UAH in Kupiansk rayon). We'll need to provide legal protection for whole membership or it will fail before it can gain any strength.

11.3.5 Oleksiy Grygoryev – Chairman of the Board, Krug Production Cooperative (hog farming)

- Ukrainian agriculture is different than US. It is not feasible to use US methods and procedures. The only new thing I saw was the robot milking process – I knew everything else.
- CEI can change public opinion on agriculture. The government and general population can make positive changes in technology and processes.
- Ukraine can use an association/cooperative like MMPA in the future. I will develop something similar when I return to Ukraine with different producers.
- In Ukraine universities provide assistance to farmers through campus work. In the US that work flows to the farmers through extension programs. This process could work in Ukraine and needs to be investigated.
- My company is the largest feed producer and we will implement a strategy like ADM. That is, support of farmers within 150 miles of processing plants. We will add some of the ADM approach to market expansion like using excess heat to grow hydroponics and aquaculture. I expect to partner with Pokohov bakery to use their heat to grow tilapia like ADM.
- I was impressed with the delegation of authority on hog farms. I believe the need to change the mentality and psychology in rural areas is more important than introducing new technology. I mean that you must behave in a predictable way and that one person can run a 2,500 hog farm.
- I want to sell feed additives all over Ukraine. I'll do this by selling the additives in the capital cities in every oblast. We don't use soy or corn – prefer wheat, barley, and oats. Now that I've seen the results, I will encourage providing full rations to hogs and poultry.

11.3.6 Sergiy Marakhovskyy – Vice Chairman, Verbovskoe Open OJSC (horse, dairy, and hog farming)

- I will immediately implement an experiment to change the feeding ration for calves. We provide 300 tons of whole milk to calves for feed. If we reduce it by 50% we would spend 120,000 UAH for 150 tons of feed for calves. Obviously, we would need to provide some mineral supplements which will cost about 75,000 UAH. Our net savings would be **45,000 to 50,000 UAH** in the first year.
- We will increase our soy planting by 100%. We sell almost all of our soy at this time but I now see that it is one of the best food supplies for our livestock. We will increase our soy harvest to 1,000 tons and use the extra soy to feed our own cattle. By increasing the amount of hectares for soy we will increase our revenues by **\$200,000 US** per year. The extra revenue will entirely pay for the use of soy in our own feed supply.
- I am now convinced we need to renovate our milk parlor (more like Knigge). We can then reduce our employees in this area from 15 down to 5 (**36,000 UAH savings**) not counting the reduction in taxes. I believe we can increase the quality of milk (less handling) and thus get an extra 5 kopek's per liter (5,000 tons at 5 kopek's liter).
- We currently put the cows out to pasture in the summer to reduce costs. Milk prices decline approximately 15 kopek's liter during the 45 days they are in pasture. We will try to implement a program similar to Knigge that provides extra feed and minerals to increase the fat and protein content in order to raise the price we receive. We expect increased revenues of 5 kopek's per liter or **492,000 UAH** per year.
- We must invest in new equipment. We need a Jaguar combine and corn cracker along with two balers and planters. I observed that all US farms have the equipment they need.

- We will use a soil injection system (Knigge) for liquid manure. We currently use a 12 cubic meter tanker and apply the manure on top of the soil then plow it under. The injection system will allow us to save fuel costs and still use the manure for fertilizer.
- No till farming will take 4-5 years before it takes root in Ukraine. Too many old farmers in charge for a more rapid adoption.

11.3.7 Valeriy Kulyk – Vice Director of Production, Cross-Zaria LTD (poultry farm)

- I learned to adapt. Americans are quick to adapt to changes in the market, we are not.
- Within one year we will produce feed for our own farms. We need to build storage for 26,000 – 28,000 tons of grain. I figure it will cost us \$10.00 USD per ton to store it versus the 900 UAH/ton we are paying to purchase it now. I expect the facilities to cost several million UAH and at 17%-18% interest rate we need to show a very good return to our members. We currently have one feed mill and one elevator that we will renovate (capacity up to 25,000 tons).
- Our complex is a giant and the biggest problem we face is the disposal of manure. We are very interested in composting (OSU) and if we can build something similar to what we saw we can save lots of money. Also, if there is a chance to use the injection method (Knigge) of application we can convince more of our neighbors to help us dispose of the waste.
- The idea of futures contracts (CME) is very appealing and we will try to develop futures contracts when we get back. We've heard a little about it going on in the southern oblasts but didn't really understand it until now.
- We don't have a good kill floor. It is inefficient. We will invest in modernizing it (Park Farms and Tyson).
- The extension service to farmers provided by universities (OSU and UK) was outstanding. I believe we can do the same for small grow out farms. Provide one day old chicks to grow out farms than send our specialists out to visit and make recommendations on improvements one month later.
- Ukraine needs to increase the culture of farming (Kentucky State Fair). Seeing children compete with such fine livestock is wonderful.

11.3.8 Andriy Rovchak – Chairman, Vostok Agricultural Cooperative (dairy farming)

- Vostok has already developed an improved feed mixture (Vitaly Rovchak participated on 1st livestock tour). We've increased pasturing to 1,800 hectares – young stock graze all summer. Right now we are growing hay on that area. Our savings from this is roughly 2.45 UAH/kg in costs from May to October.
- I've seen that rolling the grain can increase digestibility by 15%. We can then use the grain on a much larger scale and save 10% of feed per one ton of milk. We'll have to find a mill that is more productive than the one we currently use.
- I want a John Deere tractor with front loader and telescoping boom (Hesselbrock, Knigge, and Mohrfield). It will provide multipurpose use for baling hay and creating wind rows.
- I observed the need to create ventilation in barns. Cows need more ventilation than natural. We will add fans to our barns to help ventilation. I expect to get a 10%-15% increase in meat and milk as a result of better health.
- My goal upon returning to Kharkiv and implementing the new things to make us more productive will generate an additional 7,000 to 10,000 tons of milk per day. That will convert into **5,000 to 7,000 UAH** in revenues per day and 2,000 to 3,000 UAH per day in profits. That's a very good return on the time I invested to participate in the tour.

11.3.9 Nikolay Goroshko – Director, Staroverovsky Poultry Farm Agricultural LTD

- We need to increase the number of chickens (Park Farms and Tyson) to achieve economies of scale. That will necessitate building changes for broilers and layers, changes in the kill floor, mechanical processing, better manure management (OARDC) and the use of excess heat (ADM).
- Our new facility will have clay floors (Park Farms) in chicken houses – they are less expensive and absorb more moisture (drier waste material facilitates use for composting).
- Our kill floor is all manual. We need to change to something like Park Farms or Tyson to become much more productive. I filmed everything I could so we can duplicate much of the process. I figure we can buy three machines at 70,000-80,000 UAH and get a payback in 2-3 years. We cannot afford not to take advantage of the opportunity.
- We use giblets and liver to make pate. Tyson processes them into meal for resale to others. We will attempt to buy the livers from Tyson.
- Our real scourge is manure management. What I saw at Park Farms will help us get our arms around the problem. OARDC helped with composting suggestions that will save us **200,000 – 250,000 UAH** per year. We can dry the manure and add urea to it to increase nitrogen. We could then fertilize fallow fields at a cost of 40,000 – 50,000 UAH per year. In addition, we could palletize and sell it. But, we currently get 14 wet tons that would convert to 5 tons dry – we could use all that ourselves.
- Grain drying is a problem. US facilities are impressive (Knigge, Hesselbrock). Right now we have to haul it to a processor who charges us 4 UAH per % moisture removed per ton. We typically have to reduce moisture by 6% - 7%. I want to install a natural gas drying system like the ones we saw in the US.

11.3.10 Tetyana Rubizhanska – Deputy Farmer, Rassvet Farm (dairy and hog production)

- I learned a lot on the tour. I was most impressed with the Kentucky State Fair, OSU and UK extension programs to improve marketing and operations (I believe this is a huge factor in US success and will try to implement something like it when I return home); the manure disposal system at Knigge farm, the electric prompt to make the cows back up to drop manure (Knigge and Mohrfield); selling embryos (Mohrfield) is a novel idea and the pregnancy rate is very high; Glencarin natural growth for beef cattle surprised all of us; organic farming at Greenacres is something we all took something home from; OARDC and composting can solve a lot of Kharkiv problems; and ADM cooperation is a dream – wish we had a company to compare to it.
- Here's what I plan to use when I get back to Kharkiv:
 - a. Rotation approach to grazing (Greenacres). This will save s **5,000 – 10,000 UAH** per year.
 - b. Composting approach for disposal of dead animals (OSU).
 - c. Use of dry feed for pigs (Mehagan's, ADM, Bayes)
 - d. We will plant soy and use for cash crop plus ½ for feed supplement **53,000 UAH** in new revenue
 - e. Use of plastic for storing haylage and silage (Knigge, Hesselbrock)
 - f. Use of bedding for cows (Mohrfield)
 - g. Injection method of spreading manure over fields (Knigge)
 - h. Starting a 4-H like program to raise the level and knowledge of good farm techniques in Ukraine youth.

11.3.11 Lyudmyla Pelykh – Chief Livestock Specialist, Rodyna Agricultural Production Complex (dairy, hogs, and sheep)

- I thought the Mehagan farm was outstanding. It focused us on housing and feeding. In the summer time it is the same as Ukraine but in the winter it provides roofed facilities with double floors (waste removal function). We learned that we can wean piglets at 3 weeks versus the two months in Ukraine. As a result of feeding, sows lose weight and cannot breed as much (limit of 1 ½ litters per year). With the weight loss over time the mortality rate is high – we get 10-13 piglets per litter but only 7-8 survive. US numbers are much more productive and we need to change to keep up.
- We will change from wheat and barley for dry feed to corn and soy. As we observed in the US, the animals are healthier and gain much more weight in a short period of time.
- I observed at the Knigge farm and at Mohrfield that the cows were hornless. It decreases trauma so we will try this.
- We will wean calves earlier (2 months). We currently wean calves at 6 months and the cost of whole milk is more expensive than milk replacement.
- We are going to try calf isolation to reduce infant mortality. It seemed to work in the US at every farm we went to. There has to be a reason for such universal adoption so we'll try it to see if we can achieve similar results.

11.3.12 Valentyna Teliga – Chief Livestock Technician, Chepil Agricultural Farm (dairy and hog farm)

- We will change the practice of giving whole milk to calves and go to milk replacement. 25 kg. of milk replacement costs 28 UAH and makes 160 liters. Milk is selling now for 57 kopek's per liter so our savings is 63 UAH per day. Since we have calves on whole milk year round we could assume the savings would be **51,600 UAH** per year. The added cost of vitamins and minerals would be 5 UAH/kg., and would come out of those savings, but the investment is well worth while. I don't know why we have not done this earlier but the results we saw in the US convinces me that the savings can be achieved.
- We will replace the deep trench feeders with more shallow feeders. These will be easier for the milk maids to clean and eliminate spoilage. I estimate the savings to be **25,550 UAH** per year as a result of less spoilage, lower labor requirements, and better quality of feed (and fewer animal health problems).
- Artificial insemination for hogs can save us 16,000 UAH by reducing the number of boars needed to maintain the herd. It currently cost Chepil 2,000 UAH per year to keep one boar. Based on the rate of success of artificial insemination (Mehagan) we can reduce our number to two boars. The off-set for AI costs would be roughly 3,000 UAH so our net would be **13,000 UAH**
- Even after our visit to Glencarin Farm, I still do not understand enough about beef cattle. I do understand that the pasture method of growing beef cattle is a low cost method of growing.
- I plan to disseminate the information freely to everyone I see. The chair of our labor union will be provided the information to share at the rayon meetings and at the oblast level.

11.3.13 Olena Poberiy – Chief Accountant, Verbovskoe Agricultural Farm (dairy and hog farm)

- I think the spirit of the farmers is outstanding. We don't have that in Ukraine because reforms have only just begun. Owning the farm makes a very big difference.
- Associations in Ukraine are more supervisory than participatory. In the US they are more joint production and price balancing. They look for their own market. It is a joint effort to counterbalance the processors.
- We need to update our equipment. At present we have 60% outdated equipment and only 40% operable.

- We will increase soy crop from 200 hectares to 400 hectares next year. We gained 150% return on soy this year and we can use the extra revenues to off-set the amount we can then feed our own livestock.

11.3.14 Olena Kulyk – Chief Livestock Specialist, Kharkiv Oblast Department of Agriculture

- The extension service of OSU and UK was the greatest. We don't apply our resources in an efficient way in Ukraine. In the consulting area it is important to have assigned responsibility – it increases performance.
- There is a great deal of interaction between the universities and the State government that we do not have in Ukraine. Distance learning for programs for farm managers (great for building a business education background which is badly needed in Ukraine) is a program we should implement now – I'll propose when I get back. Improved forecasting and predictability models like those in the US – we can do this with the assistance of statisticians.
- There is little soy and no till farming in Kharkiv. We have such few farms willing to try and no regional seed mix nor equipment to promote it. Oblast assistance will drive more farmers in this direction.
- Our department program for 2003 and 2004 includes soy cultivation. Our plan for 2005 includes financial assistance for seeds and equipment.
- I especially like the Ohio Department of Agriculture. Their labs were part of their department. I'd like to put the stand-alone labs under our roof to improve reporting.
- ODA Livestock division was sub-divided. Five separate divisions with several inspectors to cover territory. This is much more efficient than what we have and I am taking back the organization chart to show the oblast how our American counterparts are organized.
- We have associations in Ukraine that were built from the top to the bottom. It should be the other way around. I plan to speak at a September 5 event on how to set them up and get them functioning correctly.
- 67% of all farms are now in the hands of small farmers. We can use the US model for providing assistance and helping make them successful.
- Park Farms was especially helpful. We can educate farms on table ready poultry production, clay floors for grow-out farms. We can help the grow-out farms remodel existing barns and install clay floors.
- My perception of Americans changed significantly. I now know Americans are open, kind, and helpful. That is not what we were taught and not what many of us believed before the trip. TV and movies were our only source of the cultural side of the US. Now I have first hand knowledge of how wonderful the people really are.

11.3.15 Mykola Kosov – Junior Scientific Officer, Kharkiv Agricultural University

- Process of manufacturing feed is very different in the US. Basic feature in US is that farmer grows his own feed and mixes the feed with balancing supplements. Based on what I saw, 65% is mixed on site. In Ukraine there is too much overuse of feed reflected in the high cost of production (small weight gain, low efficiency). There are 90 very large feed plants in Ukraine but only 5% are actively manufacturing feed. They collectively manufactured 0.7 million tons in 2001 mostly consumed by the poultry industry.
- I plan to teach that it is more efficient to create small shops in each rayon to develop additives and the farms to grow (and dry) their own feed.
- I plan to push for the addition of computer dispensers that dole out the right amount of feed (Purina Mills, Knigge, Hesselbrock, Mohrfield, and Mehagan).

- I plan to promote milled corn as opposed to ground corn for calves (Yellow Creek) since it increases nutrition and at a cheaper cost.
- I plan to promote a mixture of forage and concentrate for livestock. This will increase production and shorten the time to market for most Ukraine farms.
- I want to learn more about embryo transplants so we can help farmers improve herds by transplants (Mohrfield)
- I plan to push for beef cattle farming. It's easy and inexpensive. I propose 95% dairy and 5% beef farming. Based on what we say I know Kharkiv can grow beef cattle.
- I plan to work with local farmers in the establishment of cooperatives. They do marketing and other balancing functions that promote the needs of the farmer when no one else is speaking for them.
- I plan to promote the use of extension programs to my university like those of UK and OSU. We need to get closer to the farmers we are supposed to help.
- I want our farmers to grow more soy – high protein and amino acids. They need to use it to improve the feed mix and they can diversify their cash crops by adding soy.
- I want to learn how to use excess heat the way ADM does, as a means of using what was once waste and creating a use for it.

11.4 Agricultural Machinery Study Tour

11.4.1 Kostyantyn Avramenko, Fasma

The concept of outsourcing will help us greatly and we could possibly outsource as much as 70 to 80% of our components. The end result is that we could decrease our costs by 3 to 5%.

I like the “just-in-time” concept but it will be difficult to implement in Ukraine. Manufacturers are not used to providing accurate delivery times and we could find ourselves without vital components for our production. The overall manufacturing industry in Ukraine needs to be further advanced in order to implement the concept as we saw it in the U.S. However, it was an excellent opportunity to see the systems in operation and to know that it really works. At Toyota and Vermer they were able to reduce theirs by 8 times by using the “just-in-time” concept. The idea of quality circles was also new to me and we need to consider its adoption.

By using the “just-in-time” concept in our repair service operations we will be able to reduce our costs 10 to 15%.

Our company produces and markets packaging equipment. The visits to Planet Products and RA Jones showed us new equipment. When I return to Kharkiv we will discuss the possibility of designing new equipment along the lines of what I saw at these companies.

At Planet Products we were told that a marketing strategy is essential for growth and success. We will need to start work on that. It will also be essential if we are to attract new investors.

It is also necessary to demonstrate our equipment if we are to increase our sales. We can do a better job of that.

I really liked the use of bar codes and the manufacturing work sheets. These two items can really help reduce costs and confusion in the manufacturing process. I also liked the idea of having each manufacturing worker inspect the work of the previous worker. This obviously helps to improve quality and to reduce costs. Faulty components can be identified and discarded before additional costs are accumulated on components that will eventually have to be scrapped.

11.4.2 Sergiy Bezborodov, TFQ

Here I was able to see visually everything I was taught about in Ukraine. Things that were theoretical I was able to see here in practice because obviously huge capital expenditures, people in Ukraine are not able to buy laser machines that I was able to see here.

Talking about economics, I understand that theory and practice do not necessarily coincide. People are not dogmatic about some economic concepts and they try to fine tune and adjust all those theories according to their own goals and according to their own potential possibilities.

I was very impressed with the manufacturing capability of Planet Products. This particular firm has a lot in common with our own company. Earlier I had heard that such production is possible theoretically, but I had a chance to see with my own eyes that it is really possible and that is something that we should be striving for.

We have recently acquired new space and we will be able to experiment. I will insist we install wooden floors there like I have seen in many companies here as opposed to concrete. Another good idea for us will be for us to purchase a laser cutting machine although the price is prohibitive for us at this point in time. So that might not be realistic. All the information we have received here was useful and I will have to organize it and apply it specifically to meet the needs of our production.

Speaking about the economic effect, it is hard to make our calculations in one day, but let me tell you that if we buy this laser cutter, we will be able to pay for it in two years.

What we can achieve by buying the laser machine is to use it instead of pressing and forming for sheet metal. And to some extent we will be able to use it instead of milling. The thing is that the company Stankinprom (a CEI alumnus) was allowed to purchase a machine from Germany which cost about \$800,000.

I liked Americans very much. They are very friendly, kind and gracious. Compared to Ukraine, I keep hearing all the time: excuse me, I am sorry.

11.4.3 Roman Chefranov, Ukoopsnabmash

I have gained a great many new ideas that I hope to implement when I get back.

I really liked the laser cutting machines we saw at Cincinnati Inc. One of those machines would be a great help in our manufacturing operations. I also liked the great degree of cooperation we saw at many of the companies. I calculate that increased cooperation at our plant will help reduce costs by 20%.

At Toyota we saw the concept of “just-in-time” being practiced with great success. We certainly could benefit from using it in our company.

We also saw the use of “brain storming” where decisions are made from the bottom-up, not the way we do it which is top-down. That is a practice that would really help our company. At several companies we saw the effective use of slogans to give workers incentives and to track their performance. We had experience with slogans during the Soviet period, but these were much more effective.

The extensive use of bar coding really helps in keeping track of inventory items and in reducing manufacturing costs.

I liked the practice at John Deere where the customer could visit the factory and inspect his machine at final testing. We will consider this practice at our company.

We should be able to increase profits by 10% if we assemble parts for others. They can be increased by another 10% by using better methods that we saw when visiting the U.S. host companies.

I found the discussions of the dealer network very interesting and helpful. We should work on increasing our dealer network and, if we are successful, should be able to double our sales in 1 to 2 years.

11.4.4 Sergiy Danilov, Universal-Komplekt

I regret that I did not have a chance to visit Caterpillar and John Deere. These were two companies I was very eager to see. Of what I have seen here I would like to highlight certain significant aspects. To start with, I would like to mention that we have our own stamping shop so we stamp or form parts for internal combustion engines.

Facing the challenge of expanding our production, we were seriously considering buying domestically manufactured presses, but after visiting the U.S., I seriously reconsidered that option. At this point I really believe we should go after buying state-of-the-art modern equipment for stamping. In other words, we will have to reformulate our development strategy.

As you know, our major focus is in retail spare parts. So I really saw an urgent necessity to retrain our personnel to make them capable of working with foreign parts. At this point we work with domestic parts only. We will consider the objective of becoming distributors for Caterpillar or European manufacturers. Obviously we need to retrain our personnel starting with top managers and ending up with sales assistants. That is what I see as the most pressing need at this point for my company.

After I saw this monster operation at Toyota, I again regretted not having seen John Deere and Caterpillar. At this point I am involved in restructuring our company. We want to make it an advanced and sophisticated company in Ukraine which might be at least one step ahead of our peers in Ukraine. It is very hard to retrain people and have them learn new things. We are trying to do that by setting up specialized departments for sales analysis and communication, marketing, finance, purchasing (warehouse), and also a manufacturing production department. This idea of restructuring is an idea suggested by a marketing company working for us. After what I saw here, I understood very clearly that their suggestions were correct. So what they recommended was really correct and should be done.

Another thing that I learned here is the further development of branches in the country. When we talked with Brock Manufacturing they told us that one of the key requirements for their partner in Ukraine is an extensive network of branches. That again is something I realized we should be doing.

These were strategic things that I described. Now, I would like to make some minor observations. One of the things was the analysis systems those companies used. A lot of them take really detailed notes of which customers turned away from them and they try to analyze the reason why that happened. They have a detailed data base of all their customers, their former customers, etc. A lot of companies here work on forecasting sales and even Toyota makes a forecast on five months ahead.

Another idea is to restructure our warehousing. At this point I really believe we should set up a more transparent system of stocking, inventory control, we should unify our documentation, and every spare part should have a bar code. Basically now we have a specialist who knows where everything is in the warehouse. I would like to change the system and make sure a warehouse worker will not need to look for things but will know where they are. We will need to look at the bar code and go to the bin number. In the past I ignored this warehousing organization. In this unified warehouse system our employees want me to know the difference between a particular shaft and a gear. He will just need to go to that particular location and take that part from that particular shelf.

Another observation from a management perspective, Toyota told us the incentives they provide for perfect attendance. To us, we trusted our people to some extent. People would ask to excuse themselves, and so for us it was pretty much a matter of trust. But I really believe we should be establishing incentives to encourage perfect attendance.

Another psychological observation here was that I thought at some point there would be a final destination in my business. But then in talking with SEM Associates, I noticed the phrase that there is never a final destination. You can never have enough customers. I really understand that we should not be like sprinters. We should not be thinking about 2 years or 5 years to squeeze all our efforts in a short term perspective. We really should be working on strategic decisions with a much longer perspective.

11.4.5 Nadiya Gikovata, Ukrainian AgroService

Basically the two areas I was interested in during the study tour were production and marketing. As far as production is concerned, I am going to pass this information on to the top management including Mykhaylo Shvartsman (CEI alumnus) and I hope we will be able to implement all those ideas. Now, I noticed every company here has minimum cycle of production, so they try to achieve it by any possible means. Of course it is helped by the high level of development in the country in general, by internal and external factors, and also I understand that the foundation of every success is the quality of products. That is achieved by quality control that is implemented in several stages. So each worker controls or checks his own quality, the work of the previous worker, and the team leader is responsible for that and as a rule there is a special quality control service or department that does final checks. Also we noticed that the results of individual and team performance are made public on boards on the walls. That of course acts as an encouragement and incentive as well.

What was new for me was using bar codes for identification and computer tracking of component parts which certainly reduces the number of errors on the assembly line and that is something we are really suffering from. We are talking about rejects and substandard production right there at the end of the cycle.

Speaking about the production organization, I noticed that there is never a chaotic movement at any of the companies. There is always a strategy everybody is implementing. John Deere showed us their modular production. Also a new idea for me was competition between different departments or divisions or suppliers within one company. And also, all the products have been previously sold – all production is customized. They have a specific customer in mind when they make a particular product.

As for management, I noticed that the incentive for employees is not only financial in nature. We are also talking about non-material incentives such as organizing parties or including benefits such as health insurance, etc. Another thing that is impressive is that we should learn, is rigid discipline. And this stringent and rigid discipline is taken for granted. It was very important for me to see personally such well known principles or philosophies as “just-in-time” and Kanban. Just to see how they work was a great help and it was wonderful to see that they really work and are practical.

As far as economic resources are concerned, it is very important to train them on a continuous basis. When companies plan to switch over to a new model, they start training the employees 6 months in advance. They start with assemblers and they finish with the sales people.

Speaking about marketing directly, and I am pretty sure we will be able to implement about 90% of what I have seen here. What is really emphasized here is demonstration, showing ones equipment, the production segment, and the company in general. So all kinds of conference rooms are provided, there are videos and movies, presentations, and glass paneled galleries for visitors to make customers sure and confident of the quality of the product and of the seriousness of the company.

I have designed the sequences of a promotional video about my company, so not only will we show the equipment we make, but also the manufacturing process. We will include some sound bites from our executives, etc. So now I know how to make this video.

Speaking about customer relations, the conclusion I have made for myself is the necessity of personal contacts, face to face contacts. We understand that letters and telephone calls are good, but personal contacts, especially at the level of top management, are essential. Also it is a good idea to offer several packages or options for after sales support and the customer has a chance to choose among these options.

We also noticed that some companies make 50% of their sales by selling parts. Yes, we can do that too, but we should get serious about that, we should think about advertising. Actually the tour provided a serious push for me. Another lesson here is that 99% of the sales go through dealers. Yes, I

understand that people here have a different mentality and pursue things differently, but again that is something that we should be working on.

We have a dealer network now but we do not have one to such an extent as they have in the U.S. We have representatives because each and every company can become a dealer.

11.4.6 Sergiy Ivanenko, Gidroservice

I think it is a little premature to say that I have learned things and only my future actions will show what I have really learned. However, I have seen quite a lot of interesting new and exciting things that I would never have seen any other way. Everything I have learned I can further subdivide into three major categories: equipment & machines, management, and marketing. Now I am going to touch on each of these areas.

Technology

Speaking about equipment and technology, I believe that everybody was amazed and impressed with the high speed, precise laser cutting equipment. Also, the universal machining centers were very impressive. We also use bending machines and presses of different sizes but I have never seen Universal machining centers like I saw here. They can do several operations at the same time.

Speaking about the foundry, in my line of work, I deal with foundries a lot. I have never seen such cleanliness and precision in harmonizing the technological processes that we saw at Caterpillar. I have never seen anything like that. Also I was impressed with the way work stations were organized. Now the “just-in-time” concept is great. Although I am involved with hydraulics in Kharkiv, what we saw at FMC was very interesting. We saw how a piece of meat was cut with a water jet. That was really an eye opener and I have never seen anything like that.

Management

Working with dealers as partners on equal conditions, that is something I have not tried to achieve in my operations yet and I consider that very essential. Also, paying incentives and bonuses instead of giving a discount was another new idea for me. Also, very clear cut job descriptions for employees at all levels starting at assemblers and machinists and ending up with presidents and top management.

Marketing

Speaking about marketing, I was really impressed that the bulk of marketing is done with dealers of agricultural machines, not necessarily with the end user. At the same time the end user is not ignored. The whole chain of distribution is monitored to some extent and the end users are not forgotten. Companies keep calling them, e-mailing them, visiting them, observing their machines in use, giving them gifts, and basically taking care of them. So the main idea is that large companies are prepared to pay big money for quality products and excellent service.

Speaking about the ideas I will be able to implement, some of them are realistic and others are not. I am certainly going to discuss them with my companions and partners.

Idea #1: Using “just-in-time” philosophy. We should try to reduce the inventory in the warehouse. I am talking about spare parts and equipment. Although it does present problems in our country, with our vendors and suppliers that is something we really should be working on.

Idea #2: Entering into partnerships and cooperation with other companies. The idea is to outsource production with specialized manufacturers basically to relieve my own employees from unnecessary work and operations. Some work that we can place with somebody else.

Idea #3: To level the playing field for all dealers and distributors so they will not be competing against each other for best prices. At this point we do have a competition and I don't think it should be like that. Conditions should be the same for all dealers.

Speaking about highly specialized machinists such as turning, drilling, and milling machine operators, etc. the idea is to introduce the low cost manufacturing practices such as practiced by the Vermer Company. My production is primarily hydraulics and we have relations with poultry, pork, and meat processors. So the idea is to develop high speed and precise hydraulic cutting machines for them like we saw at Stein.

We hope there is a good market for this product despite the cost of \$500,000.

Speaking about the economic effect, of course there is always a difference between the ideas and their implementation. But very approximately, I can tell you that we will be able to increase our profits by 25 to 35%. I do want to tell you that we have very highly qualified economists working at my company and we are also going to involve consulting firms and they are going to process the information I have received here and they are going to localize it given our conditions and specifics of operation.

I know that CEI maintains communication with its alumni and I would like to tell you that I will report about my recommendations about what I will do. I will get back to you.

11.4.7 Vitaliy Korostil, Kharkiv Tractor Plant

While we were visiting all those companies I was very impressed with their new equipment, highly efficient technologies and one thing that I had never seen before. That was a laser cutting machine. Speaking about plans for my company, I hope that using Nina Pavlovna's resources we will have a chance to purchase laser equipment which will enable us to reduce our costs. That will be a progressive step forward in the process of making spare parts for our tractors.

Speaking about the tractors here, for a while I was not able to understand what makes them so expensive. But then when I saw the whole process starting with the very first step until the very last when a planter rolls off the line, I got all my questions about the pricing strategy answered. I realized very clearly where the bottlenecks are in our machinery production. And there are obviously a lot of ideas that we should be introducing into our manufacturing. I am talking about painting, service, and pre-sale preparation of our machines.

It is absolutely essential for us to increase the number of dealers. That is probably the most important conclusion I have drawn from the study tour. To boost our sales we need to increase the number of dealers. It is especially true that since the collapse of the former Soviet Union, the number of dealers has decreased significantly. I would also like to tell you that we used to have dealers in the U.S. selling our tractors.

Before coming here I succeeded in opening a new dealership in Western Ukraine. Now I see the need for setting up more dealerships in the more affluent sections of Ukraine, Russia and other regions.

Another advice that I am going to share with people who own land is to set up the complete cycle by having grain storage facilities and processing facilities if they have poultry farms or pig farms etc. So the idea is to have the whole cycle: land, storage, and processing.

I understand that those livestock breeders have problems with selling the by-products such as wings. We tried those buffalo wings at FMC and they are very tasty. And again, I know some individuals will be buying some equipment and hopefully they will be able to set up networks of fast food places not inferior to McDonalds.

Then there followed a long discussion about fast food which had little to do with the Tractor Factory.

I consider it very important to share this information not necessarily with my company, but with other parties that might be interested. That is what I am going to do. When I go to different exhibitions I

pick up trade brochures and I give them to my contacts. I have a database at home which lists all different types of information and where they are and I can easily locate them when needed.

I was also very impressed with the abundance of corn and soy fields I saw here. That again is something we should be learning from America. I know that 70% of corn grown here is used to make animal feed. It all starts with the farmer, the people who work on the land. Obviously, the more prosperous they are the better yields they get, the better equipment they will be able to afford. So I am just trying to work backwards and understand the whole chain. If farmers have money they will be able to select the most modern and effective machinery that fits their needs.

Speaking about my company, I am going to write a technical report with economic data that I will be using to corroborate the conclusions in the report. I should tell you that our financial management changed in February and now they practice a more democratic approach to capital distribution, distribution and production. And I hope in this report I will be able to see our own resources used to increase production and to reduce our costs.

Our capacity is huge, but at the same time, we don't have customers who are able to buy our machines. This is true for both domestic and foreign equipment. In Russia, almost 80% of agricultural machines are worn out and in Ukraine this percent is even higher.

Now we are selling mainly to Africa. They have little money, and buy tractors with capacity up to 50 horsepower with one tractor costing \$5,000. And also they buy small batches up to 50 tractors. We can also supply any tractor with the spare parts and options they want such as a heater, air conditioner, rubber tires, or whatever they want.

I have learned a lot of useful information here, something we should be implementing in our Ukrainian market.

11.4.8 Volodymyr Pyrozhkov, Alver

The most important thing I learned is that we must increase our turnover. Here they follow a lot of different techniques that we do not follow in Ukraine. For example, there is a system of "Just-in-time". This is the first time I have heard of that. If we can cut down all these operation costs then we can save a massive amount of money. This is one question. For example, at Vermer, where they manufacture bailing and other equipment, I saw they had cut down the number of operations and the work has been intensified. They use the same technique as they use at Toyota, but it has been developed by the workers themselves.

I would have liked to have spent more time working with the dealers because it is very different in our country. For example, how you select dealers and give discounts. You use different techniques with the dealerships in the U.S. For example, they give a lot of incentives including cash back, but in Ukraine, everybody gets the same price. There are no volume discounts, nothing. I am interested in offering some type of business involving Caterpillar. They have a slightly different profile, but what we saw in Caterpillar was very interesting. I was very interested in the seeders produced by Kinze. Compared to John Deere, they are much simpler and effective. They can produce that kind of equipment back home. They have the capability. I will definitely recommend this to my management.

Marketing is very aggressive in the U.S. and you cannot be satisfied that you have done everything. Your job is never done. We have concentrated exclusively on production and never thought about the marketing.

Basically the technology doesn't differ from ours. Some technologies are very interesting such as at Stein (FMC) where we saw a high pressure water jet that cuts meat. At Cincinnati Inc we saw the laser cutters. Toyota uses a great many robots in their operation. It is not the technology that is different in the U.S., but it is the organization of enterprise management that is really different.

Whatever I saw I will try to convey to my management.

11.4.9 Mykhaylo Shapiro, TFQ

I saw and learned many things that were of interest to me. First, we should fine tune our quality control system. Companies here have a much more efficient system and we can learn from them. We could also use a computer measuring system to ensure we are getting the proper quality of components.

The second thing is that I would like to install a computer tracking system in manufacturing so we can keep better track of the progress of parts and machines as they progress through the manufacturing cycle. This will require that we purchase a computer network with the necessary hardware and software and that will be expensive for us.

I also would like to purchase a laser cutting system even though it will be very expensive for us. I believe it would pay for itself within 2 years.

I would like to establish a joint manufacturing venture with Cincinnati Inc. and Planet Products. I believe we could be a good source for components for them. We will need to look into this in the future.

There were a great many other things of interest on the tour and I could talk at great length about them. However, this would take more time than we have available.

11.4.10 Mykola Tomilko, Zmiyevskoy Machine

I was very impressed with the laser cutting machines. The reason is that I had only heard about them and had never seen one. Then I saw the CNC punch press machines that can be programmed to make certain parts according to preset specifications. Also spare parts. You know I always played with the idea of having a warehouse with spare parts at my company but when I found out that companies here make up to 30% of their income by providing spare parts, that is a very convincing argument and is something I can use to press on my colleagues to tell them that this is the area we should be expanding.

Another observation here is that each line worker checks the work of the previous worker. Also, if we are talking about assembly lines, it is very important that each unit is provided to the assembler with all the component parts and required fixtures. That is, the assembler spends his time assembling rather than looking for those parts all around the place. The Vermer Company showed us how they were able to reduce the production time from 8 weeks to 4 days. They did not make all those parts in advance for some vague specific plan, but they make parts specifically for one machine and then they assemble this machine. So it is a piece by piece production as opposed to continuous production. So they make small batches of machines.

A new design idea we saw at Kinze was an arrangement whereby they can easily fold their wide-row planters into a transport position. So they make folding planters. That is a design idea that I will be using myself.

These are the major things I learned.

I can tell you I anticipate the economic effect will be that we should be able to increase our production volume by 15%.

As far as marketing methods are concerned, they are pretty much the same. We are participating in trade fairs, using advertising in magazines and journals, direct mail, phone calls, and we also use another strategy by making initial cold calls and if we see any interest, we send them our price list and then we make follow-up phone calls. If we see that farmers have a meeting, convention, seminar or the like, we try to attend the conference ourselves to market our services and products. We might even bring our machines there to show them.

11.4.11 Sergiy Yakovlev, Busol

Of course, speaking about implementation, there are more things that I should be talking about and they require more time for analysis. Let me share my first impressions with you. I have divided my implementation plan into two stages: short term and long term.

My short term plans are roughly 1 to 2 years. Specifically I am talking about setting up a dealership network in Ukraine and Russia. Then I am going to develop very detailed work assignments and task sheets for each and every operator. Basically, the operators should not need to think about what is to be done. They need to know what to be done in each operation. That will certainly increase our volume and our quality.

The next item here is participating in trade shows outside of Ukraine. I am talking about specialized shows. The next thing is making our products presentable and attractive.

Now as to the long term plans. Here I am talking about 5 to 6 years. Here I will be shaping the company as a reliable partner that has been working in this market for a long time.

The next item here is to search for suppliers or vendors of spare parts and establishing contacts and partnerships with them. Obviously the relationships that existed in the former Soviet Union have disintegrated. So now we are trying to re-establish them and it is not always easy. So basically we are talking about putting together the supply chain. Establishing those contacts and partnerships requires a lot of time. There is a test and trial period and then we move from smaller batches to larger batches. It all takes time in terms of checking quality and delivery times. It is a time consuming and lengthy process.

I am in marketing and promotions, but if I am to do my job well I need to apply pressure on top management of Busol to restructure their organization to meet modern requirements. Another new idea here is to capture new markets in which to sell our products, and to increase their product line.

The economic effect of this is based on assumptions that our market situation and legislation will remain at least at the level they are at now. That will help us increase our level of production and sales by 25% within a year or two and by 200 to 250% within 5 to 6 years – that is 2 to 2.5 times. Speaking about marketing, the methods that they use here are pretty much the same but the efficiency of using them in the U.S. is higher. Obviously all components of production and sales are working very smoothly. In our country they are not structured in many areas and are rather chaotic. So as time passes, the situation will be stabilized. The very same marketing strategies will produce a much better return.

There is a question about the paint and appearance of the Busol products. The company tries to stake its position on low cost and to obtain a competitive edge to survive in this fierce competitive struggle. This makes products cheaper and that includes substandard production because one bad point is sub-standard production. Our technology of painting is reasonably good, but the paint itself is quite cheap.

11.4.12 Yuliya Zolotaryova, Vostok

As way of introduction I would like to say, of course, we have visited a lot of companies and received a lot of information which needs to be further processed and structured.

I was very impressed with the laser machines. These are the machines that are very infrequently seen in Ukraine and I am sure that these machines will be able to repay their investment within 18 months or two years. By introducing such a machine we will be able to increase the speed of production and also the production volume.

I was very impressed with the robotics here, especially with the robotic welders. At this point we employ 10 human welders and we need to provide certain working conditions. Obviously this is very hard and intensive work and they have to be paid their financial expenses, etc. Obviously by replacing human welders with robotic welders we would be able to reduce costs significantly. If we are dealing

with a closed cycle of production, when most of the parts are manufactured in-house, obviously quality control becomes much easier.

I work at Vostok and I am the Marketing Director and also responsible for equipment. We are talking about the entire cycle from ordering to shipping. I am to some extent involved in price setting but the final decision is made by the General Director. We have 12 people in marketing and sales.

Also I was very impressed with the organization on the production floor with all kinds of little things they used such as they used spray paint to mark lines around machines to mark circles around a certain machine and that is done for safety. Also, one of their managers mentioned that it is much easier to maintain safety in a clean environment. Of course that is a reflection of American mentality, but I was very impressed with how we were met and hosted at all those companies, the demonstrations and presentations were set up but the fact that they have all those observation grounds or visitor galleries at various companies, they make presentation movies to show the visitors, they have programs and shows to highlight their equipment.

Another thing that impressed me was the abundance of different slogans the factories. Yesterday when we visited Toyota we saw all those ping pong tables and pool tables to give the workers a break because they are obviously involved in highly repetitive and boring work. So these are provided to get the workers exercise and to get them to do something else during the break time. Also, almost every company has a history wall which traces the history of the company, what they started with, what their first product was, and what they have achieved over those years.

Speaking about marketing, I was very impressed with the selectiveness of advertising campaigns. There are large and mid-level companies that don't seem to go in for advertising. They don't really spread their advertising budgets too thin by advertising everywhere and in all publications. Selectiveness is very important because as we know, advertising does not come cheap.

Also, I have noted the aggressive marketing strategy CM Associates practices and their philosophy is to keep knocking until the door is open. They keep calling until they get someone to answer. They use all kinds of non-standard and different advertising gimmicks for example by sending someone a card with sound or RA Jones sent their customers a puzzle with the name of the company that they could put together.

Also I liked the idea that the company maintains a list of mistakes the company makes. It is very important that managers learn from their mistakes and those of others. It is important for clients and sometimes they don't even know what they want, and it is also very important for the top managers of the company. And also it is a good idea to have some kind of production agreement between the company and the customer because very often the customer does not know what they want and all those arrangements need to be documented in writing. This documentation might cover the production process, or technology or other topics. But to avoid misunderstandings in the future, there should be very clear guidelines as to expectations. Pretty much everything is done according to customer's orders. Speaking of pricing, I know there are no rigidly determined prices, they are pretty flexible. They might name an approximate price. Each price is calculated in each and every specific situation considering what the particular customer wants, the technical specification, even which paint should be used on the product.

Another idea of incentives is provided for late orders and for placing orders early. There is a price differentiation for different companies depending on the volume, on the time of the order, the percentage of advanced payment, etc.

Speaking of the economic effect, obviously all kinds of information was provided that is very hard to implement given our conditions and the state of our company in general. At the same times there are certain technologies that can be implemented. Certainly safety measures can be implemented and that is something we will be working on. I am going to include this information in the technical report. And

also my colleagues are waiting for me to come back because they expect me to write an article in a specialized publication.

11.4.13 Mykhaylo Zubko, Izyumsky Repair & Transportation

When I return I will write a report about our study tour. It became clear during our tour that organizational changes at our company are required in technology, production and personnel. We need to have written description of the various jobs and operations. More training of our personnel is clearly required. That includes everyone from top managers to machine operators. This will enable them to execute more of their current strategy.

We have had a high growth rate recently and are hopeful that this will increase to 170% next year. We are also hopeful that we will be profitable this year.

We currently sell our equipment to France, Germany, and Turkey.

We are hopeful we will be able to purchase some advanced technology. This will enable us to expand into the manufacture of other parts for Western manufacturers. However, we will need equipment to be able to do this.

Prior to this study tour I was not sure how to proceed. Now, after seeing the U.S. companies, I know what I need to do and will develop a plan to accomplish it. I am particularly interested in manufacturing components for U.S. firms.

11.5 Internal Ukraine Study Tour

11.5.1 Program Evaluation (22 participants answered)

A. Was the study tour valuable from a professional point of view?

All the answers – yes (of course)

B. What was the most interesting for you?

- C The information related to livestock farming: feeding, conditions of keeping stock, selection process.
- C Livestock farming: conditions of raising stock; approaches to plant-growing
- C communication among the participants (3 responses)
- C very “visual” way of providing information (3)
- C introduction to no-till farming
- C hog breeding, organization of production
- C technology of soy production (возделывания)
- C technology used for cultivation of the land
- C understanding the fact that very small side farming is utopia, the wrong way of development in agriculture
- C division of labor and specialization of labor at large farms
- C new technology in cultivation of the land and harvesting; discovering the new kinds of corn and the demonstration of them at the special fields; acquaintance with new soy’s kinds, advantages and disadvantages of different ways of cultivation of land (no-till, low-till, traditional) and its impact on development of crops; ostrich raising
- C New methods of land cultivation, organization of labor, equipment and technology used
- C Technology of ostrich raising

- C Organization of labor and production. “Visual” way of providing information. Technology of soy production. Technology of ostrich raising. Offer to help in professional development from the side of training center at “Agro-Soyuz”
- C Technology of ostrich raising
- C Technology and equipment
- C Everything
- C Freedom Farm, all the technological operations are very well organized. Very strict discipline in technology (incentives used – punishment), that is why the results are very high
- C New methods of land cultivation. Energy saving. New equipment capacity to process wider/larger areas of processed soil. The possibility to decrease waste.
- C Stock breeding: organization of production and raising hogs. Soy production.
- C New technology of land cultivation.

C. What was the least interesting for you in the study tour?

- C everything was interesting (3)
- C nothing was least interesting (10)
- C it is not possible to implement what we could see. Too high level of organization of production. No possibility for financial start.
- C Impossible to implement the technology observed (watering, expensive equipment). As for Agro-Soyuz: we could see the equipment but not how it worked. I got the impression that the discipline is not very high.
- C I think the use of land is not very productive: very big scale of communication.
- C The schedule was too intense.
- C All the equipment shown is too expensive for us (we can’t afford it)
- C It is a different climate zone and that is why it will be for us impossible to implement what we saw.

D. Do you think that such kinds of study tours should be organized in the future?

- C It is a different climate zone and that is why it will be for us impossible to implement what we saw.
- C All the answers – Yes, of course, definitely, 100%.
- C Yes especially to Agro-Soyuz; it is similar to the climate conditions here and not so far. **We could see the goal, the way to work and live.**

E. What would you change in the study tour?

- C Organize the study tours to smaller scale farms.
- C No comments/suggestions (6)
- C Assistance in finding the sponsors for the business
- C We need to have a doctor on the bus
- C To organize the study tour during the winter time to observe hog breeding (conditions of keeping hogs).
- C It would be interesting to see smaller scale farms (200-300 ha)
- C More specialized group of participants: stock or plants production.
- C Not so many innovations at the same time, but more detailed information about the most applicable of them.
- C Cultural program at the study tour site.

- C Study tours with the demonstration of “our” equipment and the possibility to use new technologies based on it.
- C Organizing the study tours in those regions, which are similar to ours (without watering/irrigation)
- C More detailed information on the economic side of production (costs and benefits)
- C Include topics related to vegetable production
- C More complete economic information (costs, profitability)
- C More “strict” selection of study tour participants.
- C More details about the economic side of production.
- C More attention to the organizational structure.

11.5.2 Results of the Focus Group (Conducted August 20, 2003; 12 participants took part)

A. What were the most important lessons you learned during the study tour?

- I have found out a lot for myself. I have learned "positive" and "negative" sides of soy cultivation technology. I understood that for my farm it does not fit because the farm had watering (irrigation), different techniques, etc.
- I was surprised by the approach of organizing the process of farming, the way of thinking, absence of fear to experiment, to try new things, positive communication among the colleagues.
- I learned a lot of useful and interesting information about hog-farming and poultry. The main question for me was the profitability of hog-breeding. We have almost the same land, equipment, etc. as "Freedom" farm, but they use different scientific approach for breeding and feeding, which brings much higher results. “Agro-Soyuz” has considerably lower costs: labor and electricity inputs are minimal, depreciation is low as well (because of the light steel construction of the sheds). Paying more attention to costs means a lot because then profits are higher.
- I found out that the technologies of corn cultivation we observed are acceptable for our climate zone. The seeds they use will fit to our conditions as well. Gradually we have been changing the way of milking cows according to the technology which is used currently by Agro-Soyuz.
- I was impressed by the way the work is organized. I now understand, that the selection of competent personnel is the basis for success. I have made a lot of mistakes in this respect – sometimes I could not fire people because I did not want to make life complicated for them. Now business is hard and demanding. If I want to achieve success it is necessary to fire some people. If you are able to combine the capital and science successfully on our land it is possible to achieve enormous results.
- At "Freedom" farm I learned nothing useful from the point of view of implementation, especially because they did not share any economic parameters. From this point of view it was simply an excursion. They should present (in written way) the economic results of their business. This is crucial for any business. *(this comment created a lot of discussions in the group. All participants did not agree with it. Some of them believed that this person was not attentive enough and does not have enough experience to understand those aspects, which were quite clearly presented).*
- I have learned that despite of all the differences between farms (there are large and small farms, farms with different kinds of activity, farmers have different experience: some have been working for 10 years and some started only 1 - 2 years ago), it is hard to manage the problems on your own, especially for those who work only a couple of years. Cooperation is needed.
- The trip was very useful for me. I now understand that the small farmers with small fields have no chance to succeed. The larger farms are necessary.

- The economical information was given, but it was not provided to us in hard copy which would be better.
- I understood how important it is to cooperate with each other, to be united. You can't cope with problems on your own. But cooperation also creates its own problems, since partners start to "divide profits" and each one wants to get more benefits.
- It was a very useful trip. It gave me a lot of the new information. I was especially interested in the feeding structures for pigs. The Americans told us: "**It is your country. If you want it to be changed, you should change yourself**". I think that it is nice incentive for us. Right after the trip I began the reconstruction of a shed.

B. Who may benefit the most from such a study tour? (*this question was asked because of concern expressed by a participant*)

- The representatives of big farms can learn more from study tours like this.
- Small farms can hardly apply many things which were observed and learned. The benefits they could get are different: common sense things in approach, the lessons about cooperation, understanding the competition they face and necessity to unite their efforts, ability to see from another farm's experience what works and what does not, vision for the future.
- The participants of the trip, who represented the similar kind of farms in terms of size, took different things back with them. It depends on what the person is looking for and their ability to see things and to learn from the experience of others.
- Some made opposite conclusions about the possibility to apply the same crop, and the technology of its production, in our region.
- I also think that this trip was more useful for those of us who manage big farms (compared to small ones).
- I think that small farmers should not be invited to take part in such a trip.
- Such study tours are useful and necessary for all kinds of farm representatives, but, probably not at the same level for all of them.
- Undoubtedly such a study tours are necessary for all of us, including the implementation aspect. Of course we can't implement the technologies we observed totally all at once (a lot of financial capital is needed). But I am sure we may be able to introduce all of the technologies seen on this tour during the next 10 years.

C. Do you think these kinds of study tours can substitute for the US study tour? (was answered by those who previously took part in the MTM programs, but others also added comments)

- Both tours - to USA and Khahovka - provided a lot. During the longer study tours we are able to develop communications within the group which has a very high value. Now we also continue to communicate, we meet, we call, and we help each other with problems.
- The US study tours should be organized as well, they are not less useful for us, but they are different. Even for those who took part in the US study tour it is important to be able to observe how advanced technology and the organization of business is applied in Ukraine (it adds additional value).
- Maybe it is not necessary to go to the US if similar tours will be planned and organized here,
- Three days in Khahovka are better than three weeks in America. It is not easy to find free three weeks during the summer (harvesting crops, etc.).

- Not everybody can take part in a US study tour. Therefore internal study tours (like one we had to Khahovka and Dnipropetrovsk) are very necessary. The trips are great opportunities to get new contacts and form partnership relations. Both kinds of tours should exist.

D. What kind of suggestions do you have about organizing internal study tours?

- To organize the following trips according to the kinds of activity and on the basis of different farm sizes (large, small).
- To conducted specialized tours (only stock or crops production) with appropriate selection of participants.
- It was a very hard trip to do by bus (it took a lot of time to get there), at an inconvenient time. To find something closer to the region (Poltava for example)
- We did not have enough time to go through all of the topics we were interested in or to get answers to all of our questions during the tour.
- We were lucky to have finally only 35 study tour participants (we know that originally more people planned to come) but it would have been too big and not a very flexible group. Do not make groups too big.
- It may be rational to add at least one more day for the tour so it would not be so intense in terms of information covered. For example, we had a meeting with “Chumak” representative for only one hour which was obviously not enough time.
- More time should be reserved for questions at the end of the visit to each place.
- Written information on the business side of operations would be extremely useful.
- It would be useful to have a debriefing at the end of each day.

Appendix

A. U.S. Host Organizations

A.1 Grain Production Study Tour

ADM – Countrymark Barge Operation

4837 River Road, Cincinnati, OH 45233

American Soybean Association (ASA)

12125 Woodcrest Executive Drive, Suite 100, St. Louis, MO 63141 - 5009

Beard Industries

1750 W. State Road # 28, Frankfort, IN 46041-9146

Cargill Kellogg Farm Service Center

6761 Kellogg Avenue, Cincinnati, OH 45230

Chicago Board of Trade

141 West Jackson, 5th Floor, Chicago, IL 60604

Chore-Time Brock (CTB) Manufacturing

611 North Higbee Street, Milford, IN 46542

John Deere

1100 13th Avenue, East Moline, IL 61244

Heyob Farms

7820 New Haven Road, Harrison, OH 45030

Kinze Mfg Inc.

PO Box 806, I-80 (Exit 216, Morengo Exit), Williamsburg, IA 52361

Mike Farm Enterprise Inc.

2274E. Lytle 5 Point Road, Dayton, OH 45458

Miller Farm

1557 East 300 North, Portland, IN 47371

Monsanto

800 North Lindbergh Blvd, St. Louis, MO 63167

Ohio Agricultural Research Development Center (OARDC)

1680 Madison Avenue, Wooster, OH 44691

Ohio Department of Agriculture (ODA)

8995 East Main Street, Reynoldsburg, OH 43068-3399

Ohio State University

Dept. of Agricultural, Environmental & Development Economics

Agricultural Admin Bld. # 103, 2120 Fyffe Road, Columbus, OH 43210-1067

Pioneer Hi-Bred International Inc.

7000 North West 62nd Avenue, PO Box 1000, Johnston, IA 50131-1000

Schwenke Brothers Farm

4581 Beaver Road, Union, KY 41091

Southwest Landmark Agronomy Plant

310 Starbuck Road, Wilmington, OH 45177

Southwest Landmark (Land-O-Lakes) Feed Plant

767 Old Chillicothe Road, Washington CH, OH 43160

A.2 Aquaculture Study Tour

Advanced Aquacultural Technologies

PO Box 426, Syracuse, IN 46567

Bounty Seafood

6675 Salem Rd. Cincinnati, Ohio 45230

Forest Hills Kroger

7545 Beechmont Ave., Cincinnati, OH 45255

Freedom Feeds

1000 S. Edgewood Ave., Urbana, OH 43078

Freshwater Farms of Ohio

2624 North U.S. Hwy 68, Urbana, OH 43078

Jones Fish Hatchery

3433 Church Street, Newtown, OH 45244

Jungle Jim's Market

5440 Dixie Highway, Fairfield, OH 45014

Kentucky State University

Aquaculture Research Center, 103 Athletic Road, Frankfort, KY

Moreland's Shrimp Farm

370 Hornbeek Road, Farm, Butler, KY

Murdock Farm

Tri City, KY 42040

Newport Aquarium

One Aquarium Way, Newport, KY 41071

Ohio State Piketon Research

Piketon, OH

Purchase Area Aquaculture Cooperative

11526 State Route. 97, Farmington, KY 42040

Purdue University

West Lafayette, IN

Shuckman's Fish Company & Smokery

3001 W. Main Street, Louisville, KY 40212

Wolf Creek National Fish Hatchery

50 Kendall Road, Jamestown, KY 42629

A.3 Livestock Production Study Tour

Archer Daniels Midland

4666 Fairies Parkway, Decatur, IL 62526

Bayes Purebreds

Animal Science Bldg., 2129 Fyffe Rd., Ohio State University

Chicago Mercantile Exchange

30 South Wacker, Chicago, IL 60606

Glencarin Farm

2142 Hathaway, Union, KY 41092

Greenacres

8255 Spooky Hollow Rd., Cincinnati, OH 45242

Hesselbrock Farm

6020 Cincinnati-Brookville Road, Okeana, OH (738-4013)

Kentucky Horse Park

4089 Iron Works Pkwy, Lexington, KY 40511

Kentucky State Fair

937 Phillips Lane, Louisville, KY 40209

Knigge Farm

4577 Poygan Ave., Omro, WI 54963

Mehagan Farm

13864 Lloyd Rd., Genoa, IL 60135

Michigan Milk Producers Association

41310 Bridge Street, Novi, MI 48376

Mohrfield Farms

10279 State Rt. 132, Pleasant Plain, OH 45162

Mt. Healthy Hatchery

9839 Winton Road, Mt. Healthy, OH 45231

Mullins Farm

7938 Hamilton Scipio Rd, Okeana, OH 45053

OARDC

1680 Madison Ave., Wooster, OH 44691

Ohio Dept. of Agriculture

8995 E. Main St., Reynoldsburg, OH 43068

Ohio Pork Industry Center

122 Animal Science, 2029 Fyffe Rd., Columbus, OH 43210

Park Farms

1925 30th Street NE, Canton, OH 44705

Purina Mills

100 Danforth Dr, Gray Summit, MO 63039

Tewes Poultry Farm

2801 Crescent Springs, Erlanger, KY 41018

Tyson Foods

14660 US Hwy 41 S., Roberds, KY 42452

University of Kentucky

Agricultural Science Bldg, Lexington, KY 40546

Yellow Creek Farm

25202 County Road 36, Goshen, IN 46526

A.4 Agricultural Equipment Study Tour**Beard Industries**

1750 W. State Road # 28, Frankfort, IN 46041-9146

Caterpillar Inc.

100 North East Adam Street, Peoria, IL 61629-6130

Caterpillar Inc. (Wheel Loader & Excavator Division)

Caterpillar Drive (Off Orchard Road), Aurora, IL 60507

Cincinnati Incorporated

7420 Kilby Road, Harrison Township, Hamilton City, OH 45030

Chore-Time Brock (CTB) Manufacturing

611 North Higbee Street, Milford, IN 46542

CM Associates, Inc.

18535 W. Creek Drive, Tinley Park, IL 60477

The Dupps Company

PO Box 189, 548 North Cherry Street, Germantown, OH 45327-1108

John Deere

1100 13th Avenue, East Moline, IL 61244

Kinze Mfg Inc.

PO Box 806, I-80 (Exit 216, Morengo Exit), Williamsburg, IA 52361

LaRosas Pizza

5008 Gray Road, (Near College Hill & Winton Place), Cincinnati, OH 45232

Planet Products Corp.

4200 Malsbary Road, Cincinnati, OH 45242

RA Jones, Inc.

2701 Crescent Spring Road, Covington, KY 41017

Stein Associates (FMC Affiliate)

1622 First Street, Sandusky, OH 44870

Toyota Motor Manufacturing North America

1001 Cherry Blossom Way, Georgetown KY 40324-5700

Vermeer Manufacturing Company

PO Box 200, Pella, IA 50219

B. CEI Associates