PD-ABU-357

Support for Ukrainian Private Farming Sector and Scientific Collaboration: A U.S./Ukrainian Partnership

Cooperative Agreement No: 121-A00-98-00631-00
Funded by
The United States Agency for International Development
Mission for Ukraine, Belarus, and Moldova
19 Nizhniy Val Street
254071 Kiev, Ukraine

Twelfth Quarter Report
July 1, 2001 ~ September 30, 2001

October 2001

Submitted by

International Programs
Louisiana State University Agricultural Center
Baton Rouge, Louisiana

In association with
Vinnitsa State Agriculture University

International Center for Scientific Culture
World Laboratory Ukraine Branch

With the participation of the
National Agricultural University of Ukraine

LSU AgCenter Research & Extension

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AgCenter
Research & Extension

INTERNATIONAL PROGRA
Office of the Dire
118 Knapp Hall-Louisiana State Unive
Baton Rouge, Louisiana 70803
Mailing address: P.O. Box 1(
Baton Rouge, Louisiana 70893
(225) 388-(
Fax: (225) 388-(
Website: www.agctr.lsu

October 29, 2001

Dr. Oleksandr A. Muliar, Agricultural Specialists
USAID Technical Officer
Office of Private Sector Development
USAID Mission
19 Nizhniy Val Street
254071 Kiev
Ukraine

Twelfth Quarter Report for Period July 1, 2001 to September 30, 2001
USAID Cooperative Agreement No: 121-A00-98-00631-00

Dear Dr. Muliar:

Enclosed please find the Twelfth Quarter Report for the above Cooperative Agreement executed between USAID and the LSU AgCenter. The report covers the project activities for the period July 1, 2001 to September 30, 2001, of the project entitled "Support for Ukrainian Private Farming Sector and Scientific Collaboration: A U.S./Ukrainian Partnership."

One hard copy of this report, as required in Section 1.5.2 of the Cooperative Agreement, "Monitoring and Reporting Program Performance," will be delivered to you by Federal Express. The addendum to the Eleventh Quarter Report has been included in the attachments of this quarter report.

Thank you for your continued assistance and guidance.

Sincerely,

Lakshman/BWC

Lakshman Velupillai
Director

LV:bwc
f/muliar.eleven quarter report.073101
cc: Dr. William B. Richardson
Dr. Leonid Sereda
Dr. Gennady Palshin
Mr. Larry Brock
Mrs. Margaret O. Blackwell

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July 1, 2001 -- September 30, 2001

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Section I. Summary

The twelfth quarter starting July 1, 2001 and ending September 30, 2001 completes the farming season for the year 2001. During these months, the Center and raion offices have been active in providing advice to private farmers throughout the oblast. This report elaborates on the activities and demonstrates some successes by the Center performed during this quarter.

During this quarter, the Center completed the responses to the two evaluations done in the eleventh quarter. In addition, Dr. Satish Verma provided an overview of the evaluations and their effects on the project.

In our outreach activities under Objective #2, seminars, visits, and consultations increased as reported in this document. Further, farmer and HPOs inquiries and farm visits have seen an increase during this farming season. In addition, the "Farmers Library" has had a number of brochures added to its series. Demonstration and field days have provided the opportunities for the agricultural sector to interact and learn new technologies and methods.

The Credit Union has continued to do well during this quarter. The membership has continued to increase providing the opportunity for more loans to be administered.

The marketing department and the law office have received requests from a number of farmers.

The Information Systems Support team continues to update and add information to the ISS databases. The raion offices have been successfully utilizing this information to assist farmers on a daily basis.

Section II describes in detail all activities and results achieved in this reporting period.

Section II. Project Activities

A. Introduction

The twelfth quarter activities of the project included significant advances in all areas related to four components of the project. A conference attended by all of the rectors of Ukrainian Agrarian Universities and Oblast Agricultural Board representatives was held at the Center. An internal performance evaluation was conducted by Dr. Verma. The evaluation team of the project finalized this document. A number of field days were held at the sites of our demonstration plots, and a Farmers' exhibition was organized. Detailed description of these and other activities will be given further in this report.

B. Project Objective #1: Establishment of the Center for Private Farmer Training and Outreach

Evaluation activities

The internal evaluation of the Center's activities and its educational impact on private farmers conducted by Dr. Verma and the project evaluation team was completed. All the data were processed and analyzed. The report on the evaluation results and an executive summary were written by Dr. Verma, translated into Ukrainian and published. During the conference with the project staff and University faculty, a unanimous decision was made on how the report would be presented and the form in which the presentation had to be done. Oral presentations of the report were conducted in three parts: educational impact on private farmers, demographic characteristics of private farmers, and conclusions and recommendations. The report was presented to different stakeholders in Vinnitsa and Kiev in various forms. Agribusiness representatives, growers' association members, farmers, and Center's faculty discussed the results of the evaluation and gave their comments and suggestions. This input will be used in future programming by the Center. A full report was presented to the faculty and graduate students of NAUU, World Laboratory staff and USAID personnel in Kiev. The report invoked many questions and positive comments by the stakeholders. The list of suggestions on how to continue presentations with identification of the audiences (names, institutions) and the faculty responsible for the presentations was developed at the meeting with the Center's staff. University consultants also discussed the recommendations of the report during a special workshop conducted by Dr. Verma and wrote their suggestions on how to ensure that the outreach education program is relevant and responsive to the needs of private farmers.

Rectors' meeting

A meeting/seminar of the rectors of agrarian universities and representatives of the Ministry of Agriculture was held in the Institute of Extension in Vinnitsa on July 2-4. The decision to conduct this meeting in Vinnitsa was made at a previous meeting of rectors on the 22nd of February and then approved by the Ministry of Agrarian Policy on March 19, 2001. The main goal of the meeting was to study the experience of the extension/advisory system, which was established in Vinnitsa oblast at Vinnitsa State Agrarian University. Seventy-seven participants representing different organizations and institutions in the agricultural sector of the economy took part in the meeting (see table1).

Table 1. Organizations/Institutions Attending Rectors' Meeting in Vinnitsa

Organization/institution represented	Number of people
Ministry of the Agrarian Policy of Ukraine	5
Vinnytsia Oblast Administration	2
Academy of the Agrarian Sciences	1
Universities	28
Agricultural boards	18
USAID	1
LSU	1
World Laboratory	3
TACIS project	2
Other advisory systems	16

According to the program the first day was devoted to getting acquainted with the work of the Post Diploma Institute. The participants visited different departments: administrative, information support system, judical, soil laboratory, and others. They studied the policy documents, functions and work of this Institute.

The next day, the 3d of July, was the main part of the seminar. In their presentations, oblast governor Mr. Ivanov and Vice-Governor for agriculture Mr. Zabolotny talked specifically about building up the relations of cooperation between the Oblast Authorities and the University in the process for development of an advisory system.

Yury Kuharuk, the Head of the Department of Reforms in Agriculture characterized the activity of different advisory systems, which operate in Ukraine. Sergiy Melnyk, the Head of the Department of Personnel Policy for Agrarian Education and Science told the participants about the information and consulting centers organized within different agricultural universities. Oleksandr Muliar, USAID Specialist for Agricultural Development, described the agency's policy on providing support to the projects designed for organization and establishment of advisory system for private farmers and HPOs in Ukraine. Leonid Sereda, Rector Vinnitsa State Agrarian University, made a presentation about the system of advisory service established in Vinnitsa oblast from the University's perspective. He demonstrated the main results of its work. Larry Brock, LSU Representative and Vinnitsa Project Coordinator, explained the advantages of the university based agricultural advisory system. Gennedy Palshin, Director General of the Ukrainian Branch of the International Center of Scientific Culture World Laboratory, revealed the extensive scope and important role of the ISS database, which was developed under the project and the access to which it is available to all farmers of Vinnitsa oblast. Other participants shared their ideas and vision of an agricultural advisory system.

Everybody understood how important the work done by Vinnitsa State Agrarian University was, in order to establish a system for agricultural outreach and education to private agricultural producers. The system developed in Vinnitsa was recognized as a viable and transferable advisory system, which has given positive results to the farmers in Vinnitsa oblast

and has developed a system of outreach and education that can replicated by other educational institutions.

Meeting with Cherkasy and Khmelnytsky Oblast Administrations.

Trying to explore the ground for possible expansion of the project into two neighboring oblasts – Khmelnytsky and Cherkasy – the project leaders (Dr. L. Sereda and Dr. L. Velupillai) and coordinators (Larry Brock and Grygory Loyanych) together with the USAID representative (O. Muliar) made a trip to Cherkasy and then to Khmelnytsky to meet with the administration. The goal of this visit was to find out whether the administrations of both oblasts would support the efforts of two agricultural academies and the Vinnitsa Center in establishing a university based advisory system in their oblasts.

Oblast Agricultural Board hosted the meeting in Cherkasy. After the presentations about the Vinnitsa Center made by Dr. L. Sereda; Dr. O. Gerkiyal, Rector Uman Agricultural Academy; Dr. L. Velupillai, LSU AgCenter; and Dr. O. Muliar, USAID Specialist; Mr. Y. Malovichko, the Head of the Agricultural Board, spoke on behalf of oblast administration and expressed deep understanding of the purpose and goal of the project and reiterated that the oblast governor had already written a letter to USAID promising their support to the expansion of the program into Cherkasy oblast. The oblast administration assured the delegation of its full support in the establishment of a university based advisory system.

A similar meeting was held in Khmelnytsky with the reassurance made by oblast administration of its total support and willingness to cooperate.

REPORT on the 15th ESEE Seminar Wageningen, Holland

The ESEE (European Seminar on Extension and Education) is a biennial event that is organized in rotation by European centres for training and research in the field of purposeful communication for agricultural and rural development. After the successful meeting in Krakow in 1999, the Chair Group Communication and Innovation Studies of Wageningen University, the Netherlands, coordinated the seminar in August - September 2001. General and individual sessions covered a broad range of relevant topics. Extension researchers and practitioners from 30 different countries made presentations and participated in-group discussions. The chairperson of the 15th ESEE was Prof. Cees van Woerkum of the Chair Group Communication and Innovation Studies of Wageningen University.

In response to the call for papers, persons associated with our project submitted three presentation proposals and each was accepted. Dr. Satish Verma made a presentation titled "Linking Agricultural Research, Teaching, and Extension in Ukraine- Serving the Developmental Needs of a New Democracy". "Development and Utilizaton of an Integrated Information System to Enhance Extension Work in Ukraine-Which Technologies and Methodologies can Stimulate Integration?" was presented by Dr. Gennady Palshin. Grygory Loyanych, Wanda Yamkovenko, and Larry Brock submitted and presented a report titled "Problems in the Agrarian Sector-The Role and Experience of a University Based Extension System in Conditions of a Developing Democracy". All three were made at competitive concurrent sessions and were well received judged by the number of questions and intense discussion following each presentation.

Several other experiences and discussions were of direct interest to attendees from the Vinnitsa project. Of particular interest, was a presentation by Wim Beijer and Gerrit Holtland of STOAS International, The Netherlands titled "Privatisation of Agricultural Extension:

Comparing the Motivation and Mechanisms in the Netherlands with Countries in Transition". Their conclusion in brief was that the lack of transaction transparency in CIS made conditions antagonistic to private and fee based extension services. The study strongly indicated that generation of income for the provider organization became the primary reason for existence rather then the desire to create social and economic change beneficial to recipients.

Opportunities to have discussions with farmers who participated in extension programs in the Netherlands was also useful and reinforced our tenet that education programs need to be based on farmer interest and evaluated as to effective impact on positive change. One farmer was asked to list the qualities he valued in extension educators. His response reinforced the philosophy of this project that an ideal extension educator's first task was to determine needs of farmers in program development and that success could only be measured by the extent of positive change in farm practices and profitability

C. Project Objective #2: Development of Outreach Services

Outreach activities

According to the Third Annual Plan, educational/consultative and information support for farmers continued. Actual data on these activities are given in Table 2:

Table 2. Outreach Activities and Number of Participants

#	Activity	Number
1	Informational assistance	1,001
2	Consultations provided by VSAU faculty specialists	118
3	Consultations provided by raion agents to:	1,614
	• Farmers	728
	• HPOs	445
	• New farmers	130
	• Women farmers	63
	• Farmers' wives	77
	• Other categories of clients	171
4	Visits to farmers and visits of farmers to the office	1867
5	Seminars	22
6	Participants in the seminars	426
7	Seminars for HPOs	8
8	Participants in the seminars	49
9	Brochures of "Farmer's Library series"	7
10	Fact sheets	19
11	Radio programs	11
12	Newspaper articles	23
13	TV programs	15

If we compare the above table with the previous quarter, a noticeable increase in the project activities could be seen. This increase can be interrupted as a continued growth in the farmers' trust and confidence in the value of educational programs of the Center.

Seminars and workshops

The number of seminars this quarter decreased in part because its is a busy period for farmers. Nevertheless, there were particular needs that the farmers expressed through the raion offices and a number of seminars were arranged in response to these questions and held in conjunction with field days.

Farm visits and consultations

Consultations to the farmers were provided by the raion specialists and university consultants. Ninety three percent of the total number of consultations (1,732) were provided by the raion specialists. This number does not include a large number of consultations that were given by the Center's lawyer and marketing specialist. These requests will be addressed further in a later section of this report.

If we categorize all the clients who received consultations, we have the following groups with the indication of their percentage.

- farmers	- 44%
- HPOs	- 28%
- new farmers	- 8%
- women-farmers	- 4%
- farmers' wives	- 5%
- other clients	-11%

This data is slightly different from the indicators in the previous quarter. The tendency of a growing need in information by new farmers (people who would like to start farming) is evident. It is also interesting to notice that the number of private farmers in the oblast has grown by 43% over last year and half.

The indicators illustrate that our work with HPOs has remained more or less stable. Thus, the activities in which this category of producers is involved have become more diverse. This category of clients receive 445 consultation, our specialists have visited them, the HPOs come to the offices with their questions, attend seminars and workshops, and take part in field days. For the last three months 8 seminars were conducted for HPOs.

Consultations covered a great variety of issues: from the questions on land privatization and receiving land titles to the prediction of agricultural production and marketing. Some of the results of the Center's outreach activity may be seen in the success stories, given in the Attachment 1.

Publications

Seven new issues to the "Farmers Library" brochures were published to address certain requests made by the clientele. Their topics included "Labor Relations in the Private Agricultural Enterprise," "The Simple Forms of Farm Accounting," "What You Need to Know if You Raise Goats," "Accounting of Farm Storage," "Accounting of Long-Term Financial Investments," "Obligatory Social Insurance," and "Practical Recommendations on Designing Vegetable Storage Facility."

Nine fact sheets were issued. These contained answers to farmers' questions and requests about different aspects of accounting, taxes, and labor relations.

Demonstration

For three months of this quarter, the demonstration committee continued its efforts to implement all the demonstration plans for this year. In all 27 raion offices field days were scheduled and conducted on the demonstration plots at private farms. Field days were organized by raion specialists, regional supervisors and university consultants. From 6 to 28 farmers took part in each of these events.

HPOs and dacha owners took great interest in our field days. The most active of these people participated in our field days in Zhmerynka, Shargorod, Bershad, Kalynivka, Pogrebyshche and Lityn raions. The largest number of questions raised at our field days included questions concerned planting and crop growing technologies, systems of plant protection, new recommended varieties for such crops as potatoes and vegetables.

The final results for the demonstrations have been analyzed. In Lypovets raion, a demonstration plot examined the comparative characteristics of different potato varieties. Table 3 shows the productivity of these varieties.

Table 3. Comparative characteristics of the potato varieties' productivity

Name of variety	Productivity		Economic efficiency in hrn.
	Kg from 1 bush	Centner/ha	
Local variety	0.47	260	-
Borodenska purple	0.58	320	2,400
Sante	0.76	420	6,400

On the farm plot of 0.10 ha, two varieties of Sante and Borodenska purple were grown from seeds, which were bought by the Center for this demonstration. As shown in Table 1, the seeds of these varieties appeared to be more productive than a common local variety. Part of the yields from this demonstration (about 180 kg) was sold as seed material to other farmers in Lypovets raion.

The demonstration committee also collected part of the information to analyze the results of the demonstration plots that were testing the effects of the growth stimulator "Kleps." This information is shown in Table 4.

Table 4. Productivity of crops treated with growth stimulator.

Name of the farmer and village	Crop	Yield (centner/ ha)	
		Control	Kleps treatment
P. Pidvalnuk, vill. Yaltushkiv, Bar	Potato	240	293
G. Kapustniak, vill. Stepanivka, Vinnytsia	Potato	200	284
T. Poliezhayev, vill. Dashiv, Orativ	Cabbage (early ripening)	220	345
V. Kyrychyshen, vill. Mykolaivka	Spring barley	28.4	32.6
V. Pahli, vill. Dovgopolivka	Spring barley	32.2	33.1
O. Kuzmynsky, Tomashpil	Spring barley	44.2	46.4

The table above shows that in most cases when the growth stimulator was applied the crops were more productive. This growth stimulator has been studied on a number of private farms over the past 2 years and has received greater recognition and wider use by the farmers and individual owners (HPOs). Evidence of its overall acceptance is the fact that in the year 2000 it was used by 16 farms, and this year its usage has increased to include 31 private farms and 10 house plots. Farmers have used "Kleps" on the crops planted in a 4.3 ha area.

Partial information was collected on the results of the efficiency of different plant protection chemicals. This information is presented in Table 5.

Table 5. Efficient plant protection chemicals.

Farm	Name of		Weed density (plant/sq.m)	
	Chemical (herbicide)	Crop	Control	Experiment
M. Tsysiursky, vill. Bilychyn	Merlin 75	Corn 93 c	80	14
V. Volynets "Zolota Nyva"	Grodil Ultra	Spring barley	94	14

The need to develop modern local practices of animal production demands a constant search for new types of feeding rations. Studying the practices stimulates and increases the use. Currently, the Ukrainian market is being supplied with new types of feed rations that include vitamin and mineral premixes that are new to agricultural producers, especially for private farmers and HPOs. An example is a vitamin premix "Elita", produced by Gigiena Bio for feeding pigs of different sex and age. A demonstration was developed on "Flora" farm, Krizhopil raion, and on "Agrorostok" farm, Orativ raion. These demonstration were implemented by the Center and Gigiena Bio.

In this case, two groups of pigs were selected for the demonstrations. Each group consisted of 10 pigs. The average live weight of one pig in the control group was 32 kg and in a test group 27 kg. The first group (control) received a ration of the following ingredients: ground corn—0.3 kg, ground barley—1.1kg, sunflower oilcake—0.2kg, feed chalk—25g and table salt—6g. The second group (test) was given the same ration plus 1 percent of "Elita" premix. Results show that feeding pigs (3 to 5 months of age) with "Elita" premix increased their daily weight gain by 68 kg or 20.1 percent if compared to a control group. While production costs over a 56 day period in both groups were the same, the additional weight gain for the test group resulted in a 224 hryvna profit. Records of all the expenses and the rate of weight gain were kept on a monthly basis.

All animal demonstrations, including feed and premixes from agribusiness companies Kyiv Atlantic and Nutrafeed, have been analyzed. Based on the results, preparations have been made to use this information to educate farmers and HPOs. A series of publications and seminars will cover these topics.

Marketing Department Activity

The Center's marketing specialist received 45 requests from clients during the 4th quarter of the year 2001. He gave 82 consultations in response to a number of different questions. All the areas of farmers' needs may be divided into several groups. Looking at the Table 6,

marketing of farm products is a major area of farm operation that the farmers' rank as being most critical or problematic.

Table 6. Areas of Farming Activities Responded to by the Marketing Department

Area of farm activity	Percentage
Marketing of farm products	45.8
Purchasing farm machinery	24.4
Purchasing seed of winter crops	9.4
Consultations on the possibility to get a loan from a credit union "Farmers of Vinnychyna"	15.1
Other (including firm and plants addresses, discussion of cooperation, texts of Ukrainian Laws)	5.3
Total:	**100**

New contacts with agribusiness and input companies were established during the period of July to August 2001. Among these companies, there were two companies producing horse harnesses, one company producing construction materials for farm needs, and one company for seed production for grain and legume crops.

Many of the activities during this quarter were devoted to the organization of the farmers' exhibition "Podillia Expositions – 2001". The report on this activity is given below. In the process of preparations for and during the exhibition, we collected about 300 requests from agricultural producers on the marketing of their products. All of these requests were entered on our web site: www.project.vsau.org.

In July, we received three proposals from foreign companies (Belarus, Russia) concerning the purchase of agricultural products produced in Vinnitsa oblast. The information was delivered to producers and responses from our producers (ex. cannery of the collective enterprise in Pogrebyshche raion) were sent to the requesting companies.

Farmers exhibitions

The steps for organizing the Podilla Exhibition 2001 began by contacting agribusiness companies. The list of participants from the agribusiness sector has greatly increased since last year. The final list now includes 57 agribusiness companies that are willing to participate in the exhibition and 48 of which are known for their cooperation with the Center in previous activities. All of the agribusiness companies have been included in a catalogue published by the Center for the Podilla Exhibition and listed on the Center's web site.

Another element of importance in organizing Podilla Exhibition 2001 was the participation of raion specialists from the Center who gathered information from farmers and HPOs that were interested in participating. A number of farmers and HPOs from all 27 raions participated in the exhibition and were given an opportunity to market their produce and livestock. Displays were arranged for each raion to help market local producers. The information was also included in the Center's catalogue and web site. The information on the

web site has generated interest from buyers in other oblasts as well as other countries (Russia, Belarus) and continues to attract farmers for marketing assistance.

The Podilla Exhibition involved all of the project faculty who made themselves available to consult with farmers and HPOs on a wide range of agricultural topics. Results of demonstration activities implemented by the Center were also displayed.

The Podilla Exhibition was advertised on local radio, television, newspaper and transportation (signs in buses and trolley cars). AgroPerspective, a nationally published magazine, gave free advertising in several of its issues. In concluding the exhibition, project staff took part in an evaluation and analyzed the different areas of planning, as well as the level of participation from each raion. During this year's exhibition, there was a threefold increase in agribusiness companies, as well as, the four hundred farmers.

Marketing specialist together with the computer programmers have placed all of the results from the exhibition on the Center's web site.

LSU Specialists Visits

The Project staff hosted and worked with several visitors during the 12th quarter. These visitors performed evaluative, consultative, supervisory, and planning functions.

Ms. Linda Morse, USAID/Washington, spent one day evaluating project activities in July. She was accompanied by Mr. C. Crowley, Dr. O. Muliar, and Mr. B. Chomiak of USAID/Kiev. Farmers, project staff, leaders of farmer organizations, oblast and raion administrators, and bank representatives made presentations regarding project activities and the current situation in the agricultural community.

Dr. L. Velupillai visited the project during August for the primary purpose of consulting with project staff on the progress of the current project and for planning activities on issues related to a proposal to USAID to expand our activities in Ukraine over the next three years. Meetings were held with university administrators in Cherkassy and Kmelnytesky Oblasts to prepare preliminary extension activities in those two oblasts. We also visited with USAID personnel in Kharkiv Oblast for planning extension educational programs with three Oblast Agrarian Universities/academies.

The project received a visit from Dr. S. Verma in September for the primary purpose of reviewing and making presentations of the findings of an internal evaluation conducted by Dr. Verma and project personnel. Presentations were delivered to several stakeholder groups in Vinnitsa and Kiev. A written report of his findings was prepared for presentation to administrators, stakeholders, and others with a possible interest in the project's accomplishments. Dr Verma also consulted with the project's formal education team concerning further development of the universities extension education courses.

Meetings were held in both Kiev and Vinnitsa with administrators of the Peace Corps' Ukraine staff to determine opportunities for cooperation. The joint staffs identified existing possibilities in youth leadership development, small business development, and enhancement of teaching tools for local schools.

Legal services

During this quarter, the Center's legal services focused on providing Vinnitsa farmers and HPOs with timely and qualitative legal information. The staff aimed at solving various problems in the areas of production, cooperation, asset and property, other individual matters and civic-legal and administrative-legal issues alongside with legal supervision of the Center's activity.

In this reporting period, we paid special attention to the development of written information on vital legal issues, based on farmers' requests and questions. The raion agents will use this information while working with farmers and HPOs and teaching them legal issues. The Center's legal services in this quarter are shown in the Table 7 below:

Table 7. Legal Services Provided by the Center

	Activity	Total
1	Oral consultations and advice	150
2	Written consultations and advice	11
3	Visiting farmers to provide them with consultations and practical help	2
4	Seminars on legal issues, conducted in raions	-
5	Practical aid in developing legal papers	10
6	Number of legal documents already developed	11
7	Samples of the farm and cooperative By Laws and of other basic documents, prepared and spread among farmers and raion agents	9
8	Samples of agreements, contracts and other legal papers, developed and given to farmers and raion agents	17
9	Information-consultative sheets developed on the basis of farmers' requests and given to raion specialists	185
10	Texts of laws, decrees, orders, declarations and other legislative acts distributed among raion agents	14
11	Brochures of "Farmer's library" series reviling official documents	3

In addition, the Legal Services have developed a draft of the by-laws for a charity foundation and wrote a text of a practical manual for farmers "Labor relationship on a farm" that was submitted to a publishing committee. It will be published as a separate brochure.

Credit Union

The activities of the Center's Credit Union are being continued. One new farmer from Kalynivka raion received a 2,000 hrn loan for the term of 6 months. Six other members of the Credit Union applied for loans. But the situation with payments of the loans is not absolutely successful. Almost all farmers paid off their loans in a timely manner, but three of them returned the money with almost a month delay and for this reason the interest on their loans was increased as a fine for the breach of obligations. Four of the farmers who had received the loans did not pay off their loans until recently, however, they had applied and received extension due to serious disease problems as indicated in the special extension agreement. The extension was given through October 15, 2001.

The management board of the Credit Union is planning to call a general meeting and discuss necessary amendments to its by-laws. This will be done in order to recruit more members, especially among HPOs.

Soil laboratory

During this quarter, the following activities have been accomplished by the soil lab staff:

- Standardized documents on the analysis of soils, grain, feed, and water were collected.
- The study of the operation of Vinnitsa oblast agrochemistry lab has been conducted.
- Vent hoods were assembled and installed.
- Packaging for the certification documents for the soil lab was developed.
- Together with the specialist from Sumy, the atomic spectrophotometer is being calibrated.
- Gas reduction gear and gas tanks were purchased.
- Sixty soil samples were processed for farmers.
- Methods for identification of humus, acidity, nitrogen, phosphorus, potassium, micro- and macro-elements were tested.
- Soil crushers were purchased.
- Glassware and reagents were purchased.
- Soil probes were made and distributed among the raion specialists.
- Forms for sample registration, resulting data and recommendations were developed.

Links to agribusiness, growers associations and organizations in the agricultural sector

Links and activities with agribusinesses during this quarter focused on the Center's second annual agricultural exhibition. This year the exhibition experienced an increase in the number of agribusiness companies participating. Many of the companies involved had donated inputs to crop and animal demonstrations implemented by the Center on private farms and HPOs (household plot owners). Results of animal demonstrations with donated feed premixes from companies Gigiena Bio, Nutrafeed, and Kyiv Atlantic were displayed and set forth discussions with the demonstrational farms interested in the opportunity to become an agribusiness regional dealer or distributor of inputs.

This quarter, work with associations included the Center assisting in organizing an advisory committee for the Vinnitsa Apple Growers Association. On August 19, 2001, a diversified group of apple growers, specialists from the Podilla Fruit Research Station, and director of the Uman Agricultural Academy Fruit Department met at the Center to plan programs for the further development of the Vinnitsa Apple Growers Association. This group aims to meet regularly and to advise the Center on outreach programs targeted for the apple growers association.

In the 12th quarter, areas of cooperation with the growers associations were preparation and participation in the Center's agricultural exhibition. As a result of the exhibition, the growers associations raised the awareness of their work and had many requests for memberships from farmers and HPOs.

On September 7th and 8th the Center sponsored a trip for apple grower association members and a faculty person from Uman Agricultural Academy's Fruit Department to visit with a private orchard farm in Chernivtsi Oblast. This small private farm is recognized for its modern technologies in fruit production and the seminar/field day that was held provided an opportunity for Vinnitsa and Chernivtsi fruit growers to learn new technologies and exchange information.

An agricultural economist from the Center attended a conference on credit unions funded by ACDI/VOCA on August 28th and 29th 2001. During the conference, links were established with the National Association of Credit Unions and its members. With over sixty credit unions

represented at the conference, the Center was also able to establish links to several credit unions that have agricultural producers as their primary clients. Following the conference, the Center has started the process of assisting the Vinnitsa Farmers Credit Union to qualify for a membership in the National Association of Credit Unions.

In August, Tatyana Litvinova of Winrock International informed the Center on its Womens Economic Empowerment Program. An agricultural economist from the Center is setting plans for a series of business trainings with trainers from the Womens Economic Empowerment Program.

On August 30th a visit to Lviv Oblast was arranged for the Center's animal scientist to meet with Heifer Project International. Country Director Nadia Zolinska was briefed on Center activities focusing on developing the livestock sector in Vinnitsa Oblast that included identifying a village to start a demonstration community pasture. Based on this activity, Heifer Project International has indicated its interest in providing heifer cows through its program to villages collaborating with the Center. In addition to the Heifer project, the visit to Lviv Oblast allowed an opportunity to meet with farmers and the head of a feed mill cooperative sponsored by the Southern States Project.

The Holland Ukraine Fruit Project continued to collaborate with the Center on its plans to implement a program for the production of fruit organically. Several private farms and HPOs have been identified as potential partners in Mohiliv-Podilskiy, Tomashpil, and Bar Rayons of Vinnitsa Oblast. Also, in September 2001, different varieties of Dutch strawberry plants were made available by the Holland Ukraine Fruit Project to the Center for demonstration plot purposes.

Information Support System

In the Crop Production Section of the Information Support System the following were completed during this quarter.

1. Data for 30 new crop varieties and updates on 80 were added to the system.
2. Development of the software to enable **computer-aided construction of operational flow-charts** continued - redesigned are tables linking agricultural machinery with farming implements to allow for horses to be included in the operational flow-charts.
3. **Fertilizer dosage calculation program testing** is going on - all crops are grouped by similarity of calculation factors in order to be able to make calculations in case of the lack of information.
4. Seventy additional pictures of insect pests, 18 weeds and 6 diseases were processed from hard copies to digital form and put in the database.
5. Data on 50 new weed items and 24 new crop diseases were added.
6. A new database was created for 72 **mineral** fertilizers
7. Software was developed to enable the separate parts of the ISS to be distributed on CD-Rom. Now, the parts of the ISS dealing with varieties, pest insects, diseases and weeds of
   - Winter wheat;
   - Summer wheat;
   - Sunflower;
   - Sugar Beet; and
   - Corn

   are available on CD-ROM for farmers and farming entities located in other Oblasts of Ukraine.

8. Additional databases were developed from the general collection of data for each of the above mentioned crop to be included in the program on CD-ROM:
   - 154 insect pests potentially dangerous for the winter wheat;
   - 81 insect pests of the summer wheat;
   - 123 insect pests of the sugar beet;
   - 97 insect pests of the corn and
   - 89 insect pests

   Also the program was developed to render an illustration of the pest species that are killed by pest control chemicals permitted for use in Ukraine. This list covers today the insecticides used to control 72 pests of winter wheat; 47 pests of summer wheat; 43 pests of sugar beet; 36 pests of corn; and 26 pests of sunflower.
9. The database of insecticides was completed for the different vegetation phases, which includes 6787 entries today.

To sum up, this is a brief overview of the "Crop Production" section, which contains today -
- graphical database, consisting of 2063 images as large as 570 Mb
- attribute database, consisting of 678 tables as large as 30 Mb

ISS basic components

Complex of databases, containing the description of farm inputs -
with characteristics of seeds, fertilizers, plant protection chemicals, and farm machinery available at the national market, including data on terms and prices for farm inputs, as well as data on plant and animal diseases, information on tax regulations and crediting sources,
particularly, databases available today cover:
- more than 900 farmers of Vinnitsa Oblast
- 1008 companies
- 360 powered machines
- 1785 brands of agricultural machines
- 173 brands of processing agricultural machines
- 3943 varieties of 315 crops
- 503 plant protection chemicals
- 266 weeds
- 665 insect pests
- 371 crop diseases
- 72 mineral fertilizers
- 19 organic fertilizers
- 23 micro fertilizers
- 222 soil types

Database dealing with land and climate characteristics of Vinnitsa Oblast designed using the GIS principles -
- **Digital map of soils of Vinnitsa Oblast**
- **Farm plots maps** - type of soils and results of previous agrochemical analyses, weather conditions and other useful information
- **Atlas of Vinnitsa Oblast** - more than 100 maps - natural and climate conditions, such as rainfall level, soil moisture, depth of frost penetration, average monthly temperatures, natural hazards, like storms, hot winds, hails and other maps

Package of computer programs, allowing for decision-making –

A number of electronic guides -
- **eAtlas of Vegetable Crops and Potato,**

- **eAtlas of Field Crops,**
- **eAtlas of Orchard and Berry Crops,**

covering diseases, pests, and weeds, damaging the specific crop, control measures, as well as recommended chemicals and their suppliers;

Tools for cite-specific farming management -

- choosing relevant crop varieties;
- building crop rotation schemes and flowcharts;
- electronic key for plant diseases
- electronic key for pest insects
- computing the fertilization scheme;
- choosing herbicides against specific weed groups;
- farming cost analysis, so-called "farmer budget";
- computerized book-keeping

Livestock Production database contains 37 digital pictures and 28 tables with 3610 entries
Structurally, it consists of a **database** covering animal species, breeds (characterization + photos), selection work, reproduction, feed preparation, feeding, keeping;
- **retrieval system**, which facilitates the search of proper information in a data bulk. By introducing, for example, the following limitations - a sow of 2 years, weighted 120 kg, having 10 pigs and being kept in winter in Vinnitsa region, the user can get information about rations and feeding norms for it;
- electronic atlas of animal diseases, which total 1500.

ISS Sections on the Livestock Production, Bee Keeping and Animal Diseases are installed in the Central Outreach Office in Vinnitsa and prepared for further distribution in raion Offices.

On the project web-site 300 announcements of private farmers were placed in the reported period in the Internet-based virtual market page. Total number of visitors totaled 800. As an example of the successful operation of the virtual market, a barter transaction in Cherkassy Oblast and a contract on supply of vegetables from Belorussia were completed in this way in the reported period.

The ISS demonstrated its activities to Mr. Leonid Kazachenko, Vice-Prime-Minister for Agriculture, who visited the Project Center in Vinnitsa. As a follow-up to this visit, a demo version of the System has been prepared for the Ministry officials. There is a preliminary agreement to have such a meeting arranged shortly to discuss the possible extension of the National Information System of Private Farmer Support. The exact date of the meeting is being negotiated.

Experts from the ISS Team presented the potential uses for the System to the Agrarian Universities Rectors meeting in Vinnitsa Agararian University and at the International Conference "Agrarian Education at the beginning of the Third Millenium" in Lviv.

D. Objective #3: Formal Education Component

Formal education component continued and new activities were planned and schedules for continuation of the old activities were developed with the purpose to provide the Center's clients with necessary theoretical knowledge and practical skills in legal issues, technological topics and other areas of agricultural production, as well as to teach other universities' faculty how to organize extension educational activities.

During the 12th quarter period, the formal education committee was able to do the following:

1. The third session (it will last for 20 days) of the first group of new farmers was planned and scheduled for the 29th of October. The process of recruiting another group of new farmers for the first year program is being continued. Eight applications have been approved already and formal education committee is planning to schedule the first session of this group in November.

2. On the request of USAID and Kharkiv Universities, a training program was developed by our formal education team to train Kharkiv specialists. This training program was scheduled for the 15th of October. (Attachment 2)

E. Objective #4: Agricultural Technology Research Programs

a. Endophytic Colonization of Wheat (*Triticum vulgare*) and Rice (*Oryza sativa L.*) with Nitrogen Fixing Bacterium *Klebsiella oxytoca.*

JULY-SEPTEMBER. – Monitoring the crop development

New formulations of inoculants based on the technology of co-cultivation of *Paenibacillus sp.* and a bacterium of choice. The KLEPS-Z was recommended for field trials in the Vinnitsa region and variants of the new preparations based on *Paenibacillus* sp., *Pseudomonas* sp. 5, *Pseudomonas* sp. 7, and *Bradyrhizobium japonicum.* IMBG 293 has been treated in microplot experiments in IMBG NASU on potato and soybeans. Monitoring the crop development showed that the plants treated with the new inoculants P5 and P7 gained yields for potatoes of 9-10 % more than non-targeted because of protection of roots from diseases. Formulations based on the nodule-forming bacterium *B. Japonicum,* IMBG 293 have been compared in trials with the inoculant KLEPS. Analysis of soybean yields exhibited low efficacy of the new inoculants. On contrast, KLEPS has increased yield of soybean to 21,5%. Positive solution of Ukrainian Patent State Committee about awarding UBWL and Institute of Molecular Biology and Genetics of NASU with Ukrainian patent "Biopreparation for plants KLEPS." It should promote commercialization of KLEPS®™ if start-up financing can be established.

b. Isolation, characterization and utilization of insect resistance genes that will benefit Ukrainian and US agriculture

The scientific aim of the project which was devoted to the investigation of new *B.thuringiensis* (Bt) strains isolated in Ukraine was the development in creative ways to control insects using bioinsectiside against the most economically important insect pests – the Colorado potato beetle, in particular. This investigation carries applied characteristics, so the introduction of farmers into some modern agricultural technologies based on the use of these genetically engineered achievements were performed. The necessity of knowledge spreading about the nature of insect pest resistant crops, for example, is connected with opposition against genetically modified organisms. These prejudices often are caused by the absence of knowledge about genetically modified organisms, transgenic plants, in particular. The efforts were undertaken to inform farmers not only in effective pest insect control but in maintaining of the environment and receiving of ecologically pure harvest.

Early in the investigation, the scientist devoted time to the identification of insecticidal crystal proteins to be studied in conjunction with Bt strains, assessment of the insecticidal toxicity of these soluble proteins, which are produced by these strains, and the determination of the genes

specificity encoding crystal proteins, was conducted. The Bt 949 strain as the most perspective was chosen for developing an insecticidal spray formulation against the Colorado potato beetle larvae. The main crystal protein of Bt 949 belongs to Cry 1Ba group and has dual specificity – to Lepidoptera (D.sacharalis, for example) and Coleoptera. The methods of crystal protein modification were developed to increase the specific toxicity of this protein for Colorado potato beetle larvae due to the decrease of protein molecular weight. Elaborated methods are reproducible and may be use in large-scale production of biological insectiside on Bt 949 basis.

Laboratory versions of Bt spray formulation were produced in amount that was necessary for treatment of one hectare of potato crop and tested in Vinnitsa on restricted field tests. Besides that the laboratory tests of the insecticidal activity of different modified crystal protein versions were fulfilled and the condition of spray formulation storage was determined. It was revealed that crystal protein fragments with molecular weight 85 kD and 67 kD had the highest toxicity for Colorado potato beetle larvae. Due to this modification, the insecticidal activity of Bt 949 formulation became 30 times higher in comparison with native crystal protein of this strain. Thus as a result of the last project stage, the main characteristics of Bt 949 spray formulation were developed (the bacterial growth conditions, the method of effective crystal protein modification, and the storage conditions).

c. Development of the ways for gene vaccine creation on the basis of the system assembling in liposomes.

The work was directed towards the most complete study of the properties of the developed vaccine on swine – the prototype of the subunit protein vaccine against classical swine fever.

Two experiments on the immunization of piglets, aged 3 months, with the weight 15-17 kg, with the recombinant CSFV protein have been performed. Control of the amount protein introduced was being performed by Bradford method; the purity of the protein was being checked with SDS-PAGE electrophoresis. Immunizations were made twice as was developed before: dose of the protein was 1 mg per animal (the optimal between 200 mkg and 1.5 mg). To strengthen the immunogenic and antigenic properties of the preparation, the adjuvant was chosen among some tested – the modified silica. Non-immunized pigs, as well as, animals challenged with E.coli lysate served as control. Before starting of the immunization cycle and after each immunization, blood samples were taken. Blood sera prepared were assayed in ELISA, IPA in porcine kidney cell culture for antibodies including neutralizing against CSFV. Study of various protein introduction has not revealed significant differences between intramuscularly and subcutaneous routes, that's why, for convenience the intramuscular immunization was used.

It has been shown, that after the introduction of the recombinant CSFV protein to piglets, the antibodies against CSFV are secreted. In the first experiment, no neutralizing antibodies were found, that's why in the current study the 3 times immunization instead of 2 times in the previous case will be carried out. Besides the determination of the humoral answer after the introduction of the recombinant protein, the studying of the cell mediated immunity is being performed now.

The unexpected result of the immunization with the recombinant protein was observed – more quick and significant weight increase in comparison with the control animals. Because of this, careful deliberation of the animals and documentation of the results is being performed in the current experiment. Besides, the comparison with control animals include blood testing

(biochemistry, formula, etc.). Current experiment is being performed with 10 animals, the next stage will be the testing of the preparation in 200 pigs.

Urgency of the work increased greatly in 2001, as this year in Ukraine 2 cases of CSF were registered – among wild boars and domestic pigs, in particular in farm in Vinnitsa oblast.

Attachment A. **Dr. Satish Verma's Report**

Report of Satish Verma, Extension Specialist, LSU Agricultural Center
Participation in 15th European Seminar in Extension Education, Netherlands
Assignment to the Ukraine Center for Private Farmer Training and Outreach
August-September 2001

Objectives

1. To participate with Ukraine Center for Private Farmer Training and Outreach (Center) colleagues in the 15th European Seminar in Extension Education, Wageningen, The Netherlands and make presentations regarding the work and accomplishments of the Center.

2. To present to stakeholders findings of the Center evaluation conducted in 2001.

Activities

European Seminar in Extension Education, Netherlands

I participated with Center colleagues - Larry Brock, US Project Coordinator, Gregory Loyanych, Ukraine Project Coordinator, Wanda Yamkovenko, Project Associate, and Gennady Palshin, Director, Ukraine Branch World Laboratory, Kiev - in the 15th European Seminar in Extension Education held at the Wageningen University and Research Center, Netherlands, August 27-31. Over 100 delegates from 30 countries, mostly from Europe attended. Australia, New Zealand, the United States, Canada, and a few African countries were also represented. The theme of the conference, "Integrating Multiple Landuse for a Sustainable Agriculture" was the basis of plenary, open discussion, and concurrent paper presentation sessions. Topics presented at the plenary sessions included rural transformation in the world and the Netherlands, and new innovation and research paradigms for extension. Concurrent paper sessions on social learning, education and training, information and technology, farmers training, transition countries, organization, privatization, and new modes and approaches to extension, and organic farming featured a wide range of interesting and provocative presentations by individuals associated with extension, rural development, and communication in universities, ministries/departments of agriculture, private industry, and non-governmental organizations. Abstracts of paper presentations are included in the seminar proceedings.

Our group from Ukraine presented the following four papers. Copies of full papers (number 1 and 2) are attached to this report.

1. Satish Verma, Lakshman Velupillai, and Bill Brown. Linking agricultural research, teaching and extension in Ukraine: Serving the developmental needs of an emerging democracy (Appendix 1).
2. John Barnett and Satish Verma. Private row crop consulting in Louisiana and the case for interdependency among private consultants, extension, and farmers (Appendix 2).
3. Gennady Palshin, Lakshman Velupillai, and Satish Verma. Development and utilization of an integrated information system to enhance extension work in Ukraine.
4. Wanda Yamkovenko, Gregory Loyanych, and Larry Brock. Problems of the agrarian sector in Ukraine: The role and experience of a university-based extension service in conditions of a developing democracy.

Ukraine Center for Private Farmer Training and Outreach, Vinnitsa State Agricultural University, Ukraine

Background Work

The evaluation of the Center's work was conceptualized, developed, and implemented over a six-month period beginning January 2001. Major chronological steps that took place in this process were:

1. January: Rationale and scope of proposed evaluation established by Ag Center and Center
2. February: Center faculty organized stakeholder task force comprising representatives of agribusiness companies, oblast and raion administrations and agricultural boards, farmers associations, women's associations, household plot owners, Ministry of Agrarian Policy, World Laboratory, USAID and obtained input through personal interviews and task force meetings regarding the focus of the proposed evaluation.
3. March-April: Evaluation focus decided and evaluation designed by Ag Center/Center evaluation team.
4. May: Raion specialists trained in the personal interview technique; random sample of 270 farmers interviewed with a survey to determine educational impact of Center on private farmers, and farmers demographics, problems, and needs.
5. June-July: Survey data analyzed and interpreted.
6. August: Full report and executive summary of evaluation written in English and translated into Ukrainian, and three power point presentations prepared concerning the Center's educational impact; farmer demograhics, problems, and needs; and conclusions and recommendations drawn from the evaluation findings (English versions attached, Appendices 3 and 4)

Activities in Vinnitsa

From September 4-8, background work was done and oral presentations of findings were made to all raion specialists and Center faculty, and to representatives of agribusiness companies operating in Vinnitsa, the orchard growers association, and selected household plot owners. The Center's evaluation team participated actively in making the presentations to enable team members to make independent presentations to farmers and HPO groups, and raion and oblast administrations and agricultural boards as needed.

Discussions were held and plans made with the Center faculty and administration for Natasha Fishchuk who has been assigned the responsibility for leading the formal education program of the Center to visit the US for approximately two weeks in November to research and acquire material, documents, and books for the extension specialization which is planned to be started at the University in the near future.

Activities in Kiev

On September 17, Larry Brock, Gregory Loyanych, Wanda Yamkovenko and I partnered to present the evaluation findings to approximately 80 graduate students, faculty, and administrators of the National Agricultural University of Ukraine.

On September 18, we presented the findings to staff of the World Laboratory, Ukraine Branch, and three officials from USAID – Oleksander (Sasha) Muliar, Rodeina Fattah, and Gary Linden – at the World Laboratory office.

Acknowledgement

I gratefully acknowledge the financial and technical support provided by the LSU Ag Center's Office of International Programs to undertake the evaluation of the Center's work and travel to the Netherlands and Ukraine to engage in the above activities. The generosity and assistance of the Center faculty, evaluation team, and administration is greatly appreciated. I also thank the Chancellor and the Vice Chancellor for Extension, LSU Agricultural Center, for granting release time to undertake international work.

APPENDIX 1

Linking Agricultural Research, Teaching, and Extension in Ukraine -- Serving the Developmental Needs of an Emerging Democracy

Satish Verma
Head, Personnel and Organization Development
Louisiana Cooperative Extension Service
LSU Agricultural Center

Lakshman Velupillai
Director, International Programs
LSU Agricultural Center

William H. Brown
Vice Chancellor and Director
Louisiana Agricultural Experiment Station
LSU Agricultural Center

Paper Presentation

15th European Seminar on Extension Education
Wageningen Agricultural University
The Netherlands, August 27-31, 2001

Linking Agricultural Research, Teaching, and Extension in Ukraine – Serving the Developmental Needs of an Emerging Democracy

Introduction

A critical developmental need of Ukraine as a market-oriented democracy emerging in the last decade from the burden of a century of imperialist and totalitarian rule is continued growth of agriculture and agriculture support systems. The experience of countries that have been successful in developing their agriculture on scientific lines shows that agricultural progress is sustained and enhanced by an agricultural knowledge system in which agricultural research, extension, and teaching enable new and appropriate technologies to be applied by farmers. The research system serves as a knowledge center where new technologies are discovered, field tested, and released for application; the extension system serves as a two-way link between the research system and farmers bringing new technologies to the attention of farmers and, in turn, eliciting from farmers the problems they face to bring back to the research system; and the teaching system prepares and updates industry personnel, researchers, teachers, and extension workers to fill their respective roles in the overall system. The effectiveness and efficiency of the overall system are influenced by socio-political, cultural, historical, and economic forces in the environment, as well as internal factors such as structure, governance, policies and procedures, and performance.

In the Soviet era, top-down decision and management strategies characterized the agricultural production, research, and education systems in Ukraine. It is important that these systems begin to adapt to political and economic reforms, market forces, and rapidly changing technology. Prior to the current initiative to privatize all of Ukraine's agriculture, the country's agricultural production machine comprised large-scale, government collective farms, backed by research and education systems geared to the needs of that machine. Privatization resulted in the breakup of collective farms, and the emergence and growth of private farms, agri-support industries and services, and limited credit opportunities. However, the agricultural research and education infrastructure established at state, regional, and national levels continues. This infrastructure could be characterized as institutionally segregated, in that the several research and teaching institutions are nationally directed and have unique philosophies, structural arrangements, and agendas causing problems of coordination and communication

Extension as informal outreach education did not exist in the Soviet regime, and only in the last six years has it been formalized and organized in selected geographic areas in conjunction with agricultural development projects and activities.

The purpose of this paper is to describe the historical context of and recent developments in agricultural research, teaching, and extension systems in Ukraine, present the case for integrating these systems to optimize efficiency and effectiveness, and propose as an organizing option a regional approach to achieve integration while conceding that any approach must consider local, regional, and national conditions, influences, and culture, and utilize desired features of proven systems.

Agricultural Research System in Ukraine

A simplified form of the existing agricultural research system in Ukraine is shown in Figure 1. In the Soviet era, state institutions at the national level - the National Academy of Sciences and the National Academy of Agricultural Sciences (Box A) - identified research needs based upon,

among other sources, input and feedback from end users, primarily the collective farms (Box D). Local research needs were also identified by local oblast/raion (synonymous with state/county in the U.S.) administrations (Box C) through their agricultural boards and other units and fed into the system. Requests for specific research activities were then directed to the Institutes and Testing Stations (Box B) located throughout the country.

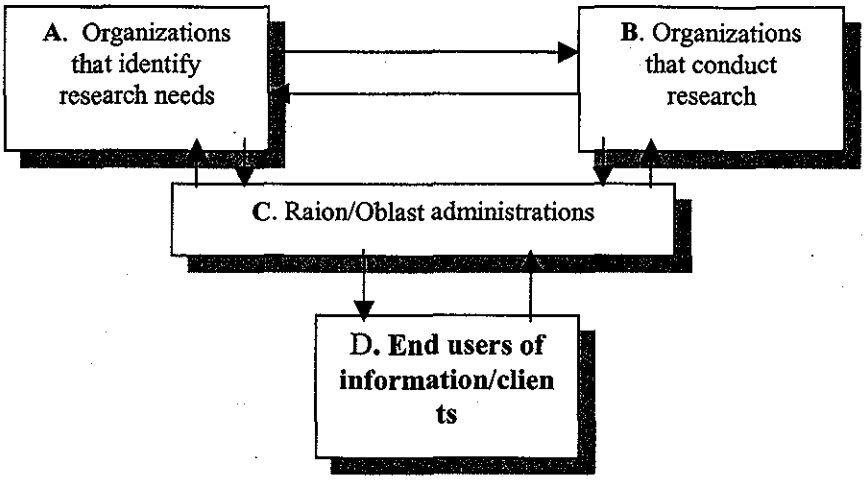

Figure 1. Agricultural Research System in Ukraine

While the research infrastructure and facilities have remained the same following independence, end users now consist of former collective farms, private individual farmers, and household plot owners (HPOs). They form the new free market agricultural sector whose needs have to be considered in research planning. Complicating this input is the slow transition of the agricultural sector to a market economy and financial difficulties facing the industry. New farmers who may or may not have had an agricultural background joined the agricultural sector. Presidential decrees on land titling and reorganizing of collectives as private enterprises created new research and training needs for farmers in such areas as land ownership, taxation, and marketing. Additionally, since the farm is now a private revenue enterprise, consideration of higher productivity and efficiencies are creating demands for improved production and post-production technologies.

During the Soviet era, research planning was centralized at the national level with fundamental and applied research carried out at about 50 institutes located throughout Ukraine. These institutes were large research farms specializing and addressing production problems in such areas as sugar beets, maize, animal selection, and genetics. They were nationally financed and directed, and their research agenda was mainly driven by the needs of large collective farms. Mechanisms were in place for managers of the collectives to periodically communicate production problems to the Ukrainian Academy of Agrarian Sciences for research. Through a centralized decision-making process one or more institutes was assigned to conduct the requested research. The programs of the institutes were broad, encompassing all phases of plant and animal culture, including fertility, mechanization, irrigation, pest control, nutrition, variety development and selection, and animal genetic improvement. There was little formal involvement of the 19 agricultural colleges and universities in Ukraine in identifying production problems, setting the research agenda, or carrying out research activities. Similarly, there was no recognition of the needs of HPOs who produce a substantial portion of Ukraine's food supply.

Since independence, a number of institutes have been closed while those remaining have been downsized. Physical facilities, and scientific and field equipment at the remaining institutes have

deteriorated significantly. These institutes need additional funds to modernize their facilities and equipment to be able to conduct relevant research and help Ukrainian private farmers become globally competitive.

Research institutes have a rich history in the development of new varieties of a broad range of Ukrainian crops. Plant breeding and variety development activities continue today and appear to be reasonably productive given the limited resources of these institutes. The National Academy of Agrarian Sciences has an extensive and well-developed mechanism for testing and certifying the seed of new lines prior to their designation as varieties. The institutes are also heavily involved in the production and distribution of "elite" seed as a source of revenue performing an important service to Ukrainian farmers until a private-sector seed trade develops. Sustained applied research programs in crop variety trials, in animal nutrition and genetic enhancement, in evaluating commercial fertilizers and modern agricultural crop protection chemicals, and in adaptation of modern farm machinery are needed.

Agricultural Education System in Ukraine

Agricultural education in Ukraine is primarily conducted at the post-secondary level through colleges, institutes, and universities to produce professionals to assume positions in industry, research, and teaching in agriculture. Colleges and universities have the same administrative status, but universities generally have more departments, a range of specialties, and the freedom to develop curricula (M.F.Kropivko, Provost for Information Technologies, NAUU, personal communication, December 2000; T Bagriy, Deputy Director, Youth Development, personal communication, December 2000; P.Stetsyshyn, Methodological Instructor, Illintsy College, personal communication, December 2000).

Governance of agricultural education at the national level is the joint responsibility of the Ministry of Agrarian Policy (MAP) and the Ministry of Education and Science (MES). Departments within these ministries are vested with the necessary authority for coordinating, funding, accreditation, issuing of "state orders", and curriculum development. For example, coordination of programs and activities is primarily done by the Department of Education of MAP and the Department of Methods of Teaching in MES. In developing technological curricula, academic councils in MAP interact with the Institutes of Agriculture in Kiev, and submit to MES which is responsible for overall curriculum development and approval. Academic and administrative policies governing all colleges, institutes, and universities are the responsibility of MES.

The National Agricultural University of Ukraine (NAUU), Kiev, has special status and exerts considerable informal influence over other agricultural education institutions in Ukraine. NAUU has agreements with selected state institutions offering preferential admission for their students; plays a key role in securing ministerial approval for curricula in regional institutions based on national guidelines; participates in ministerial accreditation of teaching institutions; and offers a four-year agricultural teacher preparation training program.

Agricultural Extension Systems in Ukraine

Several efforts beginning in the mid 1990s addressed the question of support services and education for private farmers. These efforts were driven primarily by donor support, and by private sector companies and investors from Western countries. To date, two versions of

agricultural advisory services following the European model, and one U.S. land grant-based model have been implemented. The agricultural sector underwent several accelerated reforms

following the Presidential Decree of December 1999 changing the ownership of all collective farms to private status by April 2000. The decree increased the number of private farmers almost overnight and made the task of designing and implementing farmer assistance programs more critical. Furthermore, an awareness of the need for farmer support was created nationally, and a debate on which system should be established for Ukraine ensued during the year 2000. In late 2000, a draft presidential decree requiring that an advisory service be established was produced (Government of Ukraine, 2000; Ministry of Agrarian Policy, 2000)

A review of the aforementioned advisory/extension services would be useful in considering organizing options suited to Ukraine.

Agricultural Advisory Services in Lviv Oblast, Western Ukraine

The Tacis program is a European Union initiative which provides grant finance for know-how to foster development of market economies and democratic societies in the Newly Independent States and Mongolia. An agricultural advisory project under Tacis auspices was established in January 1998 for Western Ukraine with a Center in Lviv oblast and five regional offices. The Center for Privatization and Agrarian Reform, established in 1993 by the Lviv oblast administration to assist in reform of some 660 collective farms in the oblast, received the Tacis Project grant (Agricultural Extension Service in Lviv oblast, Internet available).

At the start of the Project, over 1,200 individual family farms, 346 private limited company farms, and over 390,000 HPOs were the focus of support services and technical advice to enable them to adjust to the transition to a market economy in Ukraine. The Project was implemented by ADAS, an English firm in association with the University of Reading. Project specialists from England trained local staff both on site and through study tours in the United Kingdom. Six staff were at the central office to support staff at each of the regional offices who served a small number of clients with needed information. The program began by conducting a survey of local farms, followed by the selection of a typical farm as a pilot.

Advisory assistance was provided by the project through traditional methods, including one-on-one farm visits and consultations, both in person and via telephone. Seminars, workshops, and demonstration activities were also organized. A major activity of the project was a 30-hour farm management program in which over 200 individual farmers and managers of farm companies were trained. In addition to direct work in the farming community, a rural development component concentrated on assisting small non-farm business startups and facilitating community development activities.

The Project also conducted workshops for six other oblasts in Western Ukraine on starting extension services. This training was done in collaboration with the Ministry of Agrarian Policy.

The Project has been well-received by its clients, and the Lviv oblast administration has provided funding support in its 2000 budget for the Project. This support is supplemented by a fee charged for client services, and the sale of a farm management handbook.

Rural Advisory Services in Donetsk Oblast, Eastern Ukraine

"DonetskAgroConsult" an advisory service in Donetsk oblast, has evolved from different rural advisory initiatives beginning in 1995 into an integrated rural advisory service provider. The Donetsk oblast administration with initial support of the British Government initiated activities in 1995 to assist in privatizing land and reorganizing agricultural collectives. This experience led to the realization that the farming community also needed advice and help on a variety of subjects. Thus, in 1996, the oblast authorities established a Department for Post-Privatization Support that began offering advice and assistance on legal, economic, and accounting issues. During the next three years, the number of newly established agricultural enterprises and farms increased significantly. These enterprises demanded advice and recommendations on legal, economic, technological, processing, and marketing issues. Thus, it became necessary for the oblast administration to expand services provided by the Department for Post-Privatization Support. In 1998, the Donetsk Agrarian Reform (DAR) Project was established to meet this demand. Also, the Farms and Agribusiness Support Services (FABSS) Project was created to provide information and advisory support to agricultural enterprises, individual farmers, and HPOs to improve their production efficiency. Two regional centers were established in the oblast with raion administrations providing office space, and the Projects providing needed equipment. Specialists were trained to advise clients. By the beginning of 2000, two more regional centers were established, and the four centers are now providing advisory services in a range of technical areas to all 18 raions in the oblast (Bivko, 2000; Slauta, 2000).

The Presidential Decree of 1999 accelerating reforms in the agricultural sector catalyzed the merger of DAR and FABSS in March 2000 into the current form of DonetskAgroConsult, with the objective of assisting reform, establishing sustainable agricultural enterprises, and reviving rural communities. The merger combined the expertise and experience of DAR and FABBS to provide higher quality service in a number of areas, including property ownership, and legal, economic, bookkeeping and taxation, and technical services.

The evolution and experience of DonetskAgroConsult indicates that it is a wise decision by the oblast authorities. DonetskAgroConsult is now developing new initiatives, including the dissemination of legal rights information to the general population; developing a model for effective management of community pastures; and facilitating increased employment in the rural communities.

In summary, DonetskAgroConsult is charged with providing information and services for the public good and commercial services for agribusinesses and rural communities. It is financed by support from donors, the Ukrainian government, the oblast administration and commercial services to clients.

The Ukrainian Center for Private Farmer Training and Outreach, Vinnitsa Oblast

The Ukrainian Center for Private Farmer Training and Outreach (Center) in Vinnitsa oblast is a state-wide extension system which is being integrated with teaching at a state agricultural university and agricultural research institutes in the state (LSU Ag Center, 2000).

The Center was established at Vinnitsa State Agricultural University (VSAU) in 1998 as a U.S. Agency for International Development (USAID) funded project with technical guidance and support of Louisiana State University Agricultural Center. The Ukrainian Branch of the World Laboratory and NAUU are partners in the Project.

The key functions of the Center are to provide up-to-date agricultural production information to the farming sector; coordinate the roles of research, education, farmers, and agri-businesses; and assist farmers in solving problems.

The first charge of the Center was to make contact with local private farmers and gain their trust. A number of workshops and seminars were conducted using adult education theory on topics of

importance to successful agricultural production, such as grain production and processing, agricultural machinery and fruit tree management, livestock breeding and nutrition, farm management and record keeping, and legal and tax issues. Field days and demonstrations were also organized at regional research stations, which helped farmers develop contacts with researchers, extension faculty, and agribusinesses.

Early in the Project, selected University agricultural teaching faculty received extension training in the U.S. and now form the Center's core technical and education specialists. About midway through the Project, 27 outreach offices supported partly by local resources and staffed by trained extension personnel were established in all raions, thus reaching more farmers through farm visits, demonstration plots, and assistance with locating agricultural production supplies and equipment.

Initially, the Center's clients were primarily small and medium size private farms. As programs matured and farmer confidence grew, HPOs and members of restructured collectives were added to the client mix.

A computer-based Information Support System (ISS) has been established through the work of the World Laboratory, Kiev. Raion extension agents use the ISS to provide farmers critical information for decision making on resources, inputs, appropriate technologies, markets, and economics as well as bringing farmers problems to researchers to improve and update the database.

The Center has influenced agricultural research and teaching institutions in the oblast through a scientific coordinating council and on-site, cooperative education programs.

Links have been established with local agri-businesses, particularly seed, fertilizer and farm machinery dealers, to promote the sharing of information, education, and training to benefit farmers.

The Center has influenced other institutions in the oblast, including farmers associations, producers groups, the agro-industrial complex, oblast and raion government administrations, and donors.

Communities in the oblast have developed an awareness and appreciation of the Center's educational role and activities.

Integrating Agricultural Research, Teaching, and Extension Systems in Ukraine

Leonid Kuchma, President of Ukraine, addressing the anniversary session of the Scientific Council of the National Agricultural University of Ukraine, 1999, stated "I am certain that we are losing immense potential due to structural differentiation of the systems of education, science, and technology transfer... the state organizations and institutions responsible for integration of the systems are ineffective...We are to search new integrated forms of these three fields of

activity. Unfortunately, as in Raikin's joke – someone sews the sleeve, someone sews the trousers, someone sews on buttons but nobody is responsible for the whole suit." (National Agricultural University of Ukraine, 1998, p. 5). If integration, as indicated by the president is the desired end, the basic question is how can integration be realized and what are the options?

As the above representative descriptions show, the agricultural research, teaching, and extension systems in Ukraine are segregated in their institutions, governing structures, and programs.

Agricultural research and teaching are essentially in the public, government sector within institutions that are under different central ministries, with little or no outreach function. The emerging agricultural extension services are in both the public and private sectors, and except for Vinnitsa which is linked with teaching at a state university, are not formally connected with research or teaching institutions.

The integrated land-grant model succeeded in the U.S. for historical and cultural reasons and progressive legislation, and because it did not replace existing systems. The established segregated infrastructure, and cultural and political traditions have to be considered in building a Ukrainian approach. This approach may include features of several models that are appropriate for different conditions and situations in the country. It is important that the selected approach (a) ensures proper coordination of agricultural, teaching, and extension programs, (b) eliminates duplication of efforts, and (c) facilitates communication among individuals in the organizational or institutional structures where such programs will be housed.

Proposed Regional Model Featuring Integration

One approach based on the authors' experience over the last three years working with teaching and extension faculty and administrators at VSAU, faculty at research and educational institutes, government officials, farmers, and representatives of farmers associations and agribusinesses is proposed for consideration as a regional, multi-oblast model integrating research, teaching, and extension in a university or institute setting. It is felt that a regional approach to assist the agricultural sector in Ukraine is more appropriate than a national approach. Also, to ensure program sustainability, listen to all stakeholders, and exploit local budget support, a science-based and unbiased model that is incorporated within the structure of existing local educational institutions is preferred. The experience of the Vinnitsa project supports this view.

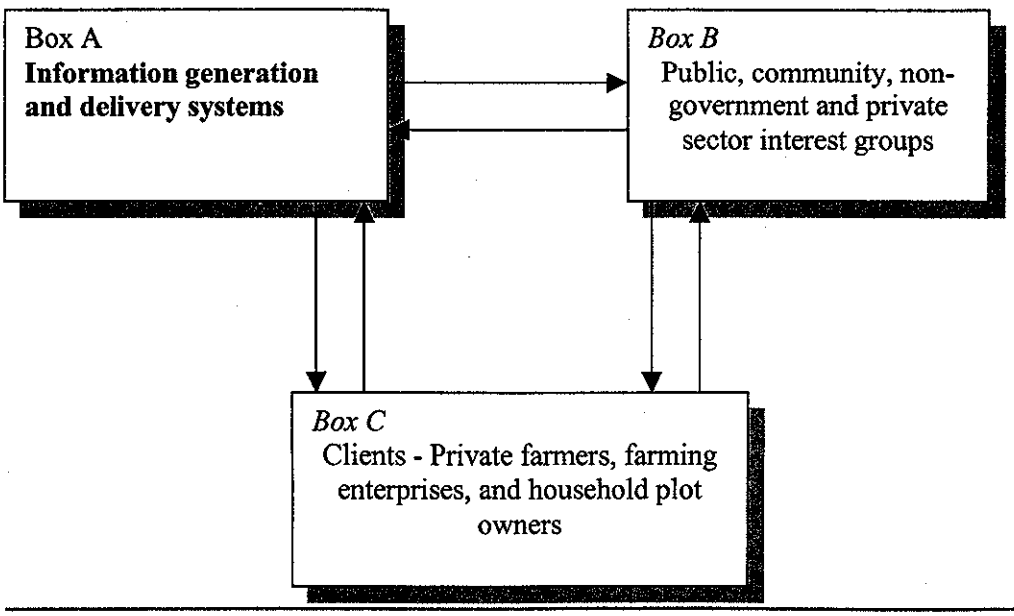

Figure 2: A conceptual model integrating research and extension

Conceptually, this approach (Figure 2) incorporates changes in Ukraine following independence. At the early stages, Collective Agricultural Enterprises (CAEs) existed side by side with the "private" farms of individuals or groups who received state land. Household plot owners (HPOs)

also cultivated cash crops, potatoes, and other staples in small plots of land. Thus, client make-up and their needs in the free market context changed. A second change was that rather than a "central order" for specific research needs, the public, government, non-government, and community and private sector entities had a vested interest in the agricultural sector. Therefore, the information generation and delivery entities (Box A) have to recognize the inputs and interests of a variety of clients (Box B). Furthermore, constant interaction among all groups is a key element of the model.

The proposed regional model (Figure 3) builds on the conceptual approach (Figure 2). Housed within the structure of a regional university or institute, the Regional Center would coordinate research and extension in the oblast/region and interact with national level institutions with regard to support, policy, and programs. The Research Division would not conduct research, but would coordinate activities, priorities, and funding for research institutions in the region. A key advantage in this arrangement is that the Center can coordinate the flow of information to clients through the Extension Division. Thus, available human and material resources in the region or oblast would be optimized in service of clientele. Duplication of effort would be avoided.

The Extension Division's main functions would be education and outreach. It would also address or undertake business, community, and market development, and focus on urgently-needed post-restructuring support programs.

Information support interface will be another important facet of the Center's work. Experience shows that clients need information on a variety of subjects including legal, credit, and input supply and availability, in addition to the traditional needs of technology, equipment, and markets. The information support interface must relate to the client through 'local' representatives of the system at the client end; and with the national entities through the Extension Institute, and the Regional Center.

The relationships of the Regional Center with the public, community, non-government, and private sector groups is an essential ingredient for success of this model. The Vinnitsa project indicated that liaison with agribusinesses in the region was invaluable. The project linked farmers with agribusinesses, and other associations and projects, with positive results. Having an ongoing dialogue with local governments, and farmer advisory groups is of vital importance, particularly with respect to feedback on programs, and setting work priorities.

Finally, the relationship of the Regional Center with national institutions will be vital for policy interactions, training of extension workers, and research coordination and collaboration. Institutions such as the National Agricultural University in Kiev, for example, will facilitate exchange of ideas and information on programs among other regions or oblasts. In turn, results or programs emanating from the Regional Center which have national implications can be channeled through sister organizations at the national level through conferences and other forums.

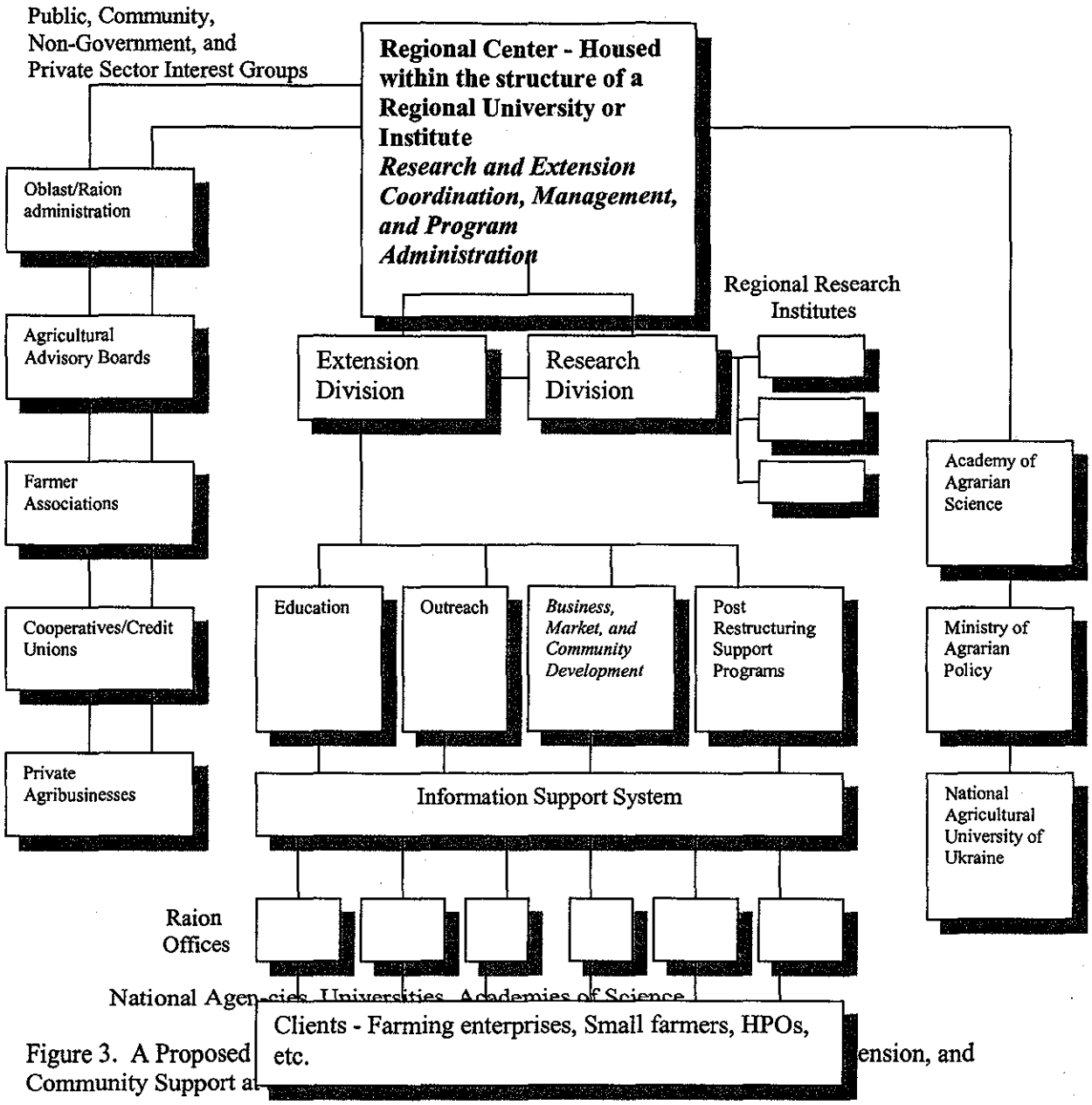

Figure 3. A Proposed ... ension, and Community Support a...

Conclusion

The transition to a market economy, recent government reforms, and experience with representative extension projects lead the authors to believe that there is great potential to link agricultural research, teaching, and extension systems for delivering science-based information to agricultural and rural populations. The integrated setup proposed has four key elements. The first element is an integrative, structural arrangement that brings research, teaching, and extension together and builds a climate which reinforces and strengthens these functions and optimizes their respective outputs. This arrangement is synergistic in that research sustains teaching and extension through new science-based knowledge; teaching faculty prepare researchers, extension personnel, and teachers to service workforce needs; and extension serves as a link between researchers and farmers/rural communities, and provides opportunities for researchers, teachers, and students to work in real-life settings. The second element is the development of regional extension systems rather than a single system for the country. Regional systems are likely to be more flexible, responsive, and effective in meeting existing and emerging client and market needs of the agricultural sector. Thirdly, from the standpoint of optimizing resources and ensuring sustainability, it is important that these regional extension systems be linked to the talents and resources of education and research institutions within the respective regions to develop an integrated research-teaching-extension system to support market-based agricultural, community, and economic development in rural areas. Finally, it is critical that the regional systems incorporate feedback from the grass roots farming level so as to listen to citizens and consumers, establish credibility and support of clientele, and respond to the needs of the country in a timely manner

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APPENDIX 2

Private Row Crop Consulting in Louisiana and Implications for Interdependency Among Private Consultants, Extension, and Farmers

John Barnett
Associate Specialist (Cotton)
Louisiana Cooperative Extension Service
LSU Agricultural Center

Satish Verma
Head, Personnel and Organization Development
Louisiana Cooperative Extension Service
LSU Agricultural Center

Louisiana State University
Baton Rouge, Louisiana

Paper Presentation

15th European Seminar on Extension Education
Wageningen Agricultural University
The Netherlands, August 27-31, 2001

Context

Private crop consulting services in the cotton industry of Louisiana, U.S.A., began in 1949 in Caddo Parish (same as county in other states) in the northwestern part of the state. These services spread slowly to northeast and central Louisiana, the other major cotton growing areas of the state.

Prior to 1949, the major provider of agricultural production and management information to farmers was the Cooperative Extension Service. Chemical company representatives and aerial applicators also gave farmers information and advice on cotton insect control and treatment. Aerial applicators, in fact, sprayed and dusted cotton fields in the early 1920s. Farmers engaged aerial applicators to begin spraying or dusting their fields at the first sign of insect infestation and followed a set schedule for the remainder of the season. Neither farmers nor aerial applicators had a scientific basis for applying insecticides. In the late 1940s, professional cotton scouts began to check cotton fields for insect infestations and make science-based control recommendations. In the 1950s and 1960s, "generalist extension agents", who had the responsibility of helping farmers in a broad range of subject matter, and chemical company representatives, who had limited technical education, experienced difficulty meeting specialized needs of farmers raising crops in an increasingly complex agricultural system. Consequently, extension agents and chemical company representatives began to be less directly involved in providing specialized information and advice. This led to the emergence of a cadre of professional, specialized consultants.

The growth of the consulting business has seen consultants branching out into several areas. Today's consultants, although still a primary provider of pest management advice, offer a variety of professional services, including budgeting, farm planning, land evaluation, governmental regulation compliance, selection and placement of crops, variety selection, use of growth regulators, harvest aids, and soil fertility.

Professional consulting is a fee-based system. The farmer is charged according to the services provided. In contrast, Extension advice and recommendations have always been free. Chemical company recommendations have also usually been free, although a sales pitch for company products is made.

Chemical company recommendations are not as prevalent as they once were, but Extension continues to be a vital link with farmers and consultants. Extension agents and specialists work year round to provide the latest production, management, and marketing information and recommendations. However, consultants are usually viewed by producers as the first line of on-farm defense in insect control.

Currently (1999), there are over 100 professional consultants in Louisiana providing contractual services to row crop farmers, including a majority of the 3,193 cotton farmers in the state. That same year, the estimated cotton acreage was 609,885 acres, and the estimated value of the crop, including seed, was nearly $260 million. Consultants are tested and certified in specific expertise areas by the State Department of Agriculture before they can practice.

It is estimated that 85 – 90% of the cotton acreage in Louisiana is under contract with a professional consultant. The contract is between the consultant and family farmers, partnerships, or corporations. Fees charged vary from $4.50 per acre up to as much as $16.00 per acre depending on the services provided. Usually, fees are paid up front or in 2-3 installments. Fees

are not negotiable, but growers can add desired services for additional fees as the season progresses.
Surprisingly, many contracts are still verbal agreements between the parties involved. Agreements stipulate the responsibility of the consulting firm to (a) conduct regular field inspections using state-certified consultants, (b) submit pertinent field inspection reports and recommendations, and (c) protect client confidentiality. Producers have to permit consultants access to their fields and follow recommendations. Fees for consultant services in different commodities are stipulated.

Impact

The introduction and expansion of the private consulting business in cotton has had wide-ranging economic, environmental, and technological impact at all levels of the industry.

From a state perspective, the most significant impacts over the last four decades are (a) the increase in cotton acreage under contract, and (b) the increase in number of cotton farmers engaging professional consultants to perform a variety of services. In 1999, 90% of the cotton acreage, or 550,000 acres, was under contract to consultants. At an average of $10 per acre, the gross income of the consulting business from cotton alone was over $5 million. Employment and other economic benefits from consulting are also considerable. Again, in 1999, all producers cultivating 1,000 acres or more employed a consultant. For cotton farmers, this means more and better use of their time to focus on other critical farm operations such as marketing, program compliance, and labor, equipment, and financial management.

For consultants, increased credibility and farmer confidence in their services are evidenced by steady return business from farmers over the years, as well as the high level of farmer adoption of consultants' recommendations (95%). Apparently, cotton farmers are satisfied that well-trained, certified professional consultants are bringing relevant, specialized technical information and recommendations using up-to-date research to help them deal with problems they face in increasingly complex and specialized agricultural systems. Although these farmers have a financial stake in the consultant, they have to receive economic returns in excess of their investment in consultants to continue to use them. Apparently, this has been happening.

Besides increased income, significant benefits to cotton farmers who use consultants and follow their recommendations are (a) assuring that an expert with a "good pair of eyes" is looking out for them, (b) achieving overall management efficiency, (c) projecting a progressive, credible image to lending institutions, and (d) viewing consultants as a management tool, like any other tool, for improving overall production and management.

Another significant impact of private cotton consulting is protection of the environment from the indiscriminate use of chemicals by farmers and aerial applicators. The positive effect on the environment of using science-based pest management and production operations, or best management practices (BMPs), in the cotton industry as recommended by trained professional consultants has been considerable. Aerial applicators, who had been spraying and dusting cotton fields as requested by farmers based on visual observation and a pre-set schedule, had now to follow recommendations of consultants who checked fields for insect counts, and the presence of weeds and diseases. Aerial applicators, who were essentially sales persons for chemical companies, eventually ceased to be a major source of advice to farmers. They are now pilots. In this change, a simplistic, environmentally degrading system of plant health insurance has been

replaced by a more elaborate, scientific, and environmentally sound system. Benefits in preserving soil and water quality have been significant.

For the most part, Extension-consultants-farmers relationships have been strengthened by the private cotton consulting business. These relationships are viewed by the parties concerned as synergistic, cooperative, and mutually beneficial. However, tensions can occur when (a) consultants and farmers undermine the credibility of Extension agents, and (b) Extension agents regard consultants as a threat to their farmer client base. On the other hand, the reasons for the strong relationship are obvious. Extension, backed by research, continues to be a source of unbiased, up-to-date, timely information and training opportunities for both consultants and farmers. Extension agents work closely with farmers and consultants to meet specific educational and information needs. Consultants rely on Extension-Research for current information which they can use in their consulting business with farmers. Farmers engage consultants to assist them in a variety of technical areas, depending on need, affordability, and relevance to their operations. At the same time, they continue to participate in extension education programs and are advocates of Extension, testifying to its credibility and value.

Major benefits of the private consulting business include:

1. Farmers are making better production and management decisions.

2. Farmers are kept informed by consultants about the latest technology, products, and services. Therefore, they are able to apply pest control measures in a timely manner.

3. Farmers do not have the burden of managing critical pest management operations, and have the time, therefore, to devote to other equally important operations

4. Farmers are making a profit.

5. Consultants are filling a critical niche in the industry, are successful entrepreneurs, and are contributing to the state's economy though employment and income generated.

6. Technologically sound pest management operations practiced by farmers are helping to protect the environment.

Professionalism, people skills, and competence are traits a consultant should possess to be successful in the consulting business. Professionalism connotes a positive attitude, objective, unbiased assessment of the production needs of farmers, projecting a professional image, commitment to work, honesty, ensuring client confidentiality, inspiring loyalty among employees, and maintaining good relationships with Extension. People skills include the ability to establish and maintain rapport, and to effectively communicate with farmers and peers, both verbally and in writing. Technical competence, constantly updated and based in the latest research, a sense of responsibility to provide timely and accurate information to farmer clients, a strong business sense, and a wealth of field experience accumulated over time are the underpinning of a successful consulting business.

Sustainability and Replicability

The private cotton consulting business in Louisiana has increased steadily over the last 50 years and covers most of the cotton acreage and large cotton farms in the state. Return business over

this period is evidence that private cotton consulting is a stable and sustainable business enterprise in the state.

Consulting is moving into other agricultural and horticultural enterprises. Consultants are now working in turf grass management, forestry, and the nursery business, and their presence is increasing. Currently, there are approximately 100 professional consultants in Louisiana. This number is likely to increase in the near future, with most of the expansion coming in the forestry and horticultural industry.

Expansion of the consulting industry in Louisiana will depend on several factors, including the needs of the forestry, turf and horticultural industries, increased pressure from environmental advocates, and greater use of consultants by other row crop producers.

The professional consultant offers a service that is of value in the fast-paced environment surrounding cotton producers. Producers have to deal with growing technological complexity, environmental stewardship issues, and regulatory controls. Professional consultants are in an excellent position to be of greater value in the future. The key is consultants who are well-educated and engage in continuously learning new technology. Improving education and preparing consultants for this role is the job of the land grant university system in the U.S. There is at least one university in the nation currently offering a doctoral degree in plant health. This type of degree may be in greater demand in the future. Universities will have to provide the impetus and support for this emerging discipline.

In the U.S., consulting is still a young and growing profession. It began in the southern half of the U.S. and more specifically in the mid-south. It continues to spread to other areas of the country.

There is an opportunity for professional crop consulting in other parts of the world. Australia, New Zealand, and Western European countries have an established consulting tradition. Growth in these countries will be limited only by the availability of trained consultants and economic constraints. Developing countries of Asia, Africa, and Latin America, on the other hand, rely heavily on tax-supported, public sector extension to meet the information needs of farmers. Except for specialized, large farms in these countries, it is unlikely that extension/information services will be developed in the private sector.

Elements of the private consulting industry that are replicable elsewhere include technical training and retraining, and licensing, certification, and regulation of consultants; a research-extension system to support consultants with new technology; a fee-based, contractual system offering a range of services demanded by farmers; environmentally responsible consultants and farmers; and a professional association for consultants.

Lessons Learned

The basic economic principle of demand and supply can be observed in this experience. Farmer demand for services of value led to the creation of private, fee-based consulting services

inasmuch as the University-based Extension system did not have the personnel resources to meet this demand to the satisfaction of farmers.

Sustained, future demand will depend on how effectively private consulting services meet the economic and environmental goals of farmers.

Professional consulting has had positive economic, technological, and environmental impacts on row crop agriculture, particularly cotton. Increased acreage under contract and farmer adoption of consulting services, and higher economic returns have been obtained. Technological efficiencies have been demonstrated, and further degradation of soil and water avoided.

Expansion of professional consulting to other crop enterprises will hinge on farmer demand, technology, and availability of consultants.

The use of a professional consultant can enhance the management of a farm operation.

Training and education are of utmost importance in developing a competent professional consulting industry. The university system should be an integral part of training and supplying research-based information needed by professional consultants.

Private consultants need Extension; Extension needs consultants. Each fills a niche in the knowledge utilization system. Both need research. Private consultants rely on the Extension-Research system for up-to-date research-based information and training/education. Extension relies on consultants to provide specialized services that it cannot provide due to limited resources and its broader, more general education and service role in production agriculture. This kind of interdependency is a necessary condition for the introduction and growth of a viable consulting industry.

Consulting services can achieve broader environmental stewardship goals and regulatory provisions, and at the same time satisfy individual farmer needs.

The development of consulting industries in the private sector in other nations will require the support and assistance of their education, research, and extension systems.

Key mechanisms initiating and guiding the change to private consulting services include (a) the teaching, research, and extension arms of the land grant university responsible for technology generation and utilization, and the training of consultants (b) technological, economic, and environmental drivers in the agricultural industry motivating farmers and business entrepreneurs, and (c) licensing, certification, re-certification, and regulatory programs for the private consulting industry under the auspices of the State Department of Agriculture.

Extension managers could be trained in these mechanisms through seminars and workshops in which they would be exposed to the underlying structure and process of the land grant university system, and the major concepts involved in initiating and developing private consulting services for farmers. In the United States, a state with a successful private consulting industry and its associated land grant university could organize this training. Other countries with similar systems and conditions could also provide this training. Other countries with similar systems and conditions could also provide this training.

(Authors' Note: The information contained in this case is based on an analysis of in-depth interviews with five private consultants working in major cotton production areas of Louisiana.

These consultants have experience in the consulting business ranging from 15-50 years. In addition, three cotton farmers located in three geographic locations in the state responded to a mailed survey. They have large operations – 4000-9000 acres – and employ full-time consultants for a broad range of services. The authors have relied on their personal knowledge and experience of the cotton industry and the Extension system in Louisiana to interpret the data collected and to add their own perspectives.)

APPENDIX 3

Ukrainian Center for Private Farmer Training and Outreach
An Evaluation of Educational Impact,
Farmer Demographics, Problems and Needs

Executive Summary

Prepared and Presented by

The Center's Evaluation Team
Vinnitsa State Agricultural University

and

Office of International Programs
LSU Agricultural Center

September 2001

Ukrainian Center for Private Farmer Training and Outreach
An Evaluation of Educational Impact,
Farmer Demographics, Problems and Needs

Executive Summary

Purpose of Evaluation

The USAID-funded Ukrainian Center for Private Farmer Training and Outreach, Vinnitsa Oblast, was officially inaugurated in October 1998 to assist private farmers and household plot owners improve agricultural production and marketing through an outreach education program. Over a three-year period, the Center, established at Vinnitsa State Agricultural University and staffed with trained faculty at University level and in all raions, organized education programs in high-need subject matter areas and collaborated with agribusiness companies to provide farmers with farm inputs and information for on-farm demonstrations and other education activities.

The purpose of this evaluation of the Center's education program was to (a) determine educational impact on private farmers with regard to their involvement, learning, and actions, and (b) describe farmer demographics, problems, and needs.

Methodology

Various stakeholders – private farmers, Household Plot Owners, University/raion specialists, raion and oblast administrators, World Laboratory staff, and faculty from national universities/academies- participated in a forum in January-February, 2001 to indicate how they had interacted with and what they expected from the Center, and what questions should be addressed in the evaluation.

The evaluation survey included questions on participation of farmers in the Center's education programs, their reactions, the extent to which they learned and adopted new ideas and practices, and changes in their attitudes and aspirations as a result of contact with the Center. The survey also contained questions to determine personal and farming characteristics of farmers, problems experienced in farming, and needs which, if satisfied, would make them better farmers.

There were 1,128 registered private farmers in the oblast as of March 1, 2001. A random sample of 270 farmers was drawn from lists of farmers in raions. Raion specialists who had worked with farmers in the project period were intensively trained for a day and a half on the personal interview technique. The training included presentations and hands-on practice. Data were gathered in May-June 2001, with oversight from the Center's zone supervisors. Quantitative data were statistically analyzed and responses to open-ended questions were categorized and summarized.

Summary of Results

Educational Impact

- All registered private farmers in the oblast have been reached through workshops, seminars, field days, demonstrations, publications, radio and television programs, and personal contacts with raion and university specialists.

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- Private farmer participation in the Center's programs has increased over the three years of the Center's operation and 85% of participating farmers are satisfied with the quality and value of the information they receive.

- More than 75% of private farmers learned a variety of new ideas and skills from the agricultural, legal, business, and organizational information presented in the Center's education programs.

- Nearly 90 different ideas and skills were given as examples. These included crop rotation, new potato varieties, how to apply pesticides, protein feed mixes, how to make business plans, how to develop bylaws for a private farm, benefits of fixed tax in agriculture, and calibration of ploughs.

- 75% of the private farmers learning new ideas and skills have put into practice one or more ideas or skills in agricultural production, management, marketing, credit, and organization.

- The Center is preferred as a source of agricultural, legal, business, and organizational information over the agrarian ministry, private companies, colleges and universities, or other farmers.

- 75% of private farmers have used the Information Support System (ISS) of the World Laboratory to get answers to questions about production, marketing, and management.

- A majority of private farmers have benefited by being involved in some way in the Center's collaborative work with private agribusiness companies.

- Interaction with the Center appears to have had a positive influence on the general outlook of private farmers toward democratic and market-oriented changes in Ukrainian agriculture, society, and life.

Farmer Demographics

A personal profile of farmers sees them as middle aged (average age 44 years), essentially male (94%), having completed two or more years of college (80%)

A farming profile of farmers:

- Farming on their own for an average of 4.9 years, with a range of less than 1 to 10 years.
- 80% derive their main income from farming. 20% depend on salary/pension, or are teachers, accountants, and in business.
- More than 65% belong to a farmers/growers association for communication, cooperation, and assistance/information on farm inputs and marketing.
- 87% have a certificate of land ownership. 40% lease land.
- More private farmland is held under lease (8,224 hectares) than owned (6,051 hectares). Average size of leased land (79 hectares) is three times as much as average size of land owned (26 hectares).
- Major crops grown are wheat (3,055 hectares), barley (2,255 hectares) and sugarbeet (1,150 hectares).
- Hog production (36% of farmers) is more prevalent than dairy-beef (30% of farmers) or poultry (13% of farmers).

- Tractors, cultivators, and planters are the most used and owned items of agricultural machinery. Sharing among farmers is a common practice.
- More farmers buy farm inputs than barter them.
- 25% produce their own seeds, livestock feed, and organic fertilizer.
- Credit terms are perceived to be unfavorable – high collateral and interest, short term loans, and bank refusals.
- 75% do not have adequate on-farm storage for inputs and farm products.
- Marketing outlets include wholesalers, retailers, agricultural processing companies, and direct personal sale in local markets.
- 32% feel marketing terms and conditions are poor.
- 80% prepare production plans, 40% prepare marketing plans, and 28% prepare business plans.
- 80% have contact with large reorganized collectives for technical assistance.

Problems of Private Farmers

- Lack of optimum inputs
- Inappropriate production practices
- Lack of credit and personal finances
- Inadequate agricultural machinery and equipment
- Bureaucratic barriers
- Marketing difficulties
- Legal, tax, and land issues

Needs of Private Farmers

- Assistance with financial and material resources
- Inputs and production technologies
- Being able to secure credit on favorable terms
- Overcoming legal, tax, and land constraints in farming

Conclusions and Recommendations

Conclusion 1

The Center's establishment and outreach education program has made a difference in the personal lives and professional farming enterprises of Vinnitsa Oblast private farmers. On all measures of educational outcomes – participation in education programs, interest and satisfaction evoked, learning and application of new ideas and skills, and positive attitudes and aspirations expressed – there is evidence to suggest that private farmers have made significant changes in their farming operations.

Recommendations

1. The gains the Center has made should be consolidated and built upon for further development of private farming enterprises and the agriculture industry in the oblast. This implies that the Center's outreach education program should be continued, and adjusted and improved to meet the current and emerging needs of private farmers.

2. Key stakeholders – raion and oblast administrations, concerned ministries, departments and agencies, private farmers, farmers associations, farm leaders, private agribusiness interests, and universities, colleges and research stations – should be involved in collaborative activities to legitimize and support the Center's outreach education program and maximize its impact.

3. Faculty of the Center at the university and in the raions should be continually updated to learn the latest technology and people skills, and stay involved in ongoing programmatic initiatives and program evaluations.

4. Household Plot Owners (HPOs) are a significant segment of the agricultural enterprise in Vinnitsa Oblast both in number of producers and quantity of production. Thus far, they have been a marginal audience of the Center. With the experience the Center has gained in reaching private farmers, HPOs should become a major target of the Center's education programs.

5. Future evaluations of the Center should, in addition to measuring educational changes in private farmers and HPOs, determine the economic return on investment in the Center's education programs as well as the social and economic impacts of the Center's work on farming communities in the oblast.

Conclusion 2

The descriptive profiles of personal and farming characteristics of private farmers in Vinnitsa Oblast reveal more homogeneous than variable patterns. For example, farmers are essentially similar in such characteristics as gender (males), education (college), years in private farming (relatively new, 10 years or less), major income source (farming), belonging to a farmers association (majority), and resources owned and needed (limited resources, credit difficulties, exchanging resources). Variation among farmers is found in such characteristics as age (young to elderly), land owned or leased (small to large farm holdings), technology practiced (some traditional, some scientific, some a combination), etc. These patterns have implications for educational programming.

Recommendation

6. Personal and farming characteristics of private farmers in the oblast should be considered in planning and conducting educational programs. Research has shown that audience characteristics influence the learning and adoption of new ideas and practices. Homogeneity-heterogeneity is an important variable to consider in the planning process. Specific levels of the different characteristics of farmers should also be taken into account.

Conclusion 3

Private farmers face many serious technological, resource, financial, legal, credit, and land tenure problems that are barriers to increased agricultural production and overall productivity. They need assistance from various sources, i.e., government, private industry, universities, colleges, and research institutes to help address these problems and improve their productivity as farmers. Even though farmers face significant problems and express the need for assistance, a majority of farmers have positive attitudes and aspire to be better farmers and citizens.

Recommendations

7. The Center should continue to be responsible to private farmers for education programs and needed technical assistance in the discharge of the educational mission. Providing services to farmers and doing things for them is appropriate to the extent that it does not compromise the educational role of the Center. Becoming an agent of local and state governments for regulatory and inspection programs in agriculture should be avoided at all costs.

8. The Center should also be responsible to help farmers on those needs and problems that can be addressed in an educational context. This can be done in various ways, including involving farmers in an advisory role to suggest solutions, developing teaching materials, and conducting programs that make farmers aware of these solutions and other helpful information.

9. The Center is not in a position nor does it have the resources to directly assist farmers with many problems and needs, such as community infrastructure, providing loans, and purchase of inputs. However, the Center should be responsive to these needs and problems and facilitate their resolution by organizing farmers, providing them with appropriate information, and contacting and arranging with concerned agencies and organizations to help farmers

APPENDIX 4

Ukrainian Center for Private Farmer Training and Outreach
An Evaluation of Educational Impact, Farmer Demographics, Problems and Needs

Full Report

Prepared and Presented by

The Center's Evaluation Team
Vinnitsa State Agricultural University

and

Office of International Programs
LSU Agricultural Center

September 2001

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Preface

This evaluation of the Ukrainian Center for Private Farmer Training and Outreach was initiated by the Office of International Programs, LSU Agricultural Center. Designed as a summative, end-of-project evaluation of the USAID-funded Center, it has two major purposes: (a) assess the educational impact of the Center's outreach education program on Vinnitsa Oblast private farmers to satisfy accountability needs; (b) determine characteristics, needs, and problems of private farmers to guide future educational programming. The evaluation report presents the rationale, purpose, methodology, and results of the evaluation in the pages that follow. Summaries of the evaluation results are presented at pages 13 and 30 and may be read for a quick overview and background to the major conclusions emerging from the evaluation and the specific recommendations being made to guide policy and program decisions.

Conclusion 1. The establishment and outreach education program of the Center has made a remarkable difference in the personal lives and professional farming enterprises of Vinnitsa Oblast private farmers. On all measures of educational outcomes – participation in the Center's education programs, interest and satisfaction evoked, learning and application of new ideas and skills that took place, and the positive attitudes and aspirations expressed – there is strong evidence to suggest that private farmers have been influenced by the Center to make significant changes in their farming practices.

Recommendations

1. The gains the Center has made should be consolidated and built upon for further development of private farming enterprises and the agriculture industry in the oblast. This implies that the Center's outreach education program should be continued, and adjusted and improved to meet the current and emerging needs of private farmers.

2. Key stakeholders – raion and oblast administrations, concerned ministries, departments and agencies, private farmers', farmers associations and farming leaders, private agribusiness interests, and universities, colleges and research stations – should be involved by the Center in collaborative activities to legitimize and support the Center's outreach education program and maximize its impact.

3. Faculty of the Center at the university and in the raions should be continually updated to learn the latest technology and people skills, and stay involved in ongoing programmatic initiatives and program evaluations.

4. Household Plot Owners (HPOs) are a significant segment of the agricultural enterprise in Vinnitsa Oblast in terms of both number of producers and quantity of production. Thus far, HPOs have been a marginal audience for the Center. With the experience the Center has gained in reaching private farmers, HPOs should become a major target of the Center's education programs in the near future.

5. Future evaluations of the Center should, in addition to measuring educational changes in private farmers and HPOs, determine the economic return on investment in the Center's education programs as well as the social and economic impacts of the Center's work on farming communities in the oblast.

Conclusion 2. The descriptive profiles of the personal and farming characteristics of private farmers in Vinnitsa Oblast reveal more homogeneous than variable patterns. For example, farmers are essentially similar in such characteristics as gender (males), education (college), years in private farming (relatively new, 10 years or less), major income source (farming), belonging to a farmers association (majority), and resources owned and needed (limited resources, credit difficulties, exchanging resources). Variation among farmers is found in such characteristics as age (young to elderly), land owned or leased (small to large farm holdings), technology practiced (some traditional, some scientific, some a combination), etc. These patterns have implications for educational programming.

Recommendation

6. Personal and farming characteristics of private farmers in the oblast should be considered in planning and conducting educational programs. Research has shown that audience characteristics influence the learning and adoption of new ideas and practices. Homogeneity-heterogeneity is an important variable to consider in the planning process. Specific levels of the different characteristics of farmers should also be taken into account.

Conclusion 3. Private farmers face many serious technological, resource, financial, legal, credit, and land tenure problems that are barriers to increased agricultural production and overall productivity. They need assistance from various sources, i.e., government, private industry, universities, colleges, and research institutes to help address these problems and improve their productivity as farmers. Even though farmers face significant problems and express the need for assistance, a majority of farmers have positive attitudes and aspire to be better farmers and citizens.

Recommendations

7. The Center should continue to be responsible to private farmers for education programs and needed technical assistance in the discharge of the educational mission. Providing services to farmers and doing things for them is appropriate to the extent that it does not compromise the educational role of the Center. Becoming an agent of local and state governments for regulatory and inspection programs in agriculture should be avoided at all costs.

8. The Center should also be responsible to help farmers on those needs and problems that can be addressed in an educational context. This can be done in various ways, including involving farmers in an advisory role to suggest solutions, developing teaching materials, and conducting programs that make farmers aware of these solutions and other helpful information.

9. The Center is not in a position nor does it have the resources to directly assist farmers with many problems and needs, such as community infrastructure, providing loans, and purchase of inputs. However, the Center should be responsive to these needs and problems and facilitate their resolution by organizing farmers, providing them with appropriate information, and contacting and arranging with concerned agencies and organizations to help farmers.

Acknowledgements

The Center's Evaluation Team acknowledges the assistance of raion specialists in conducting interviews, and the cooperation of private farmers in providing information. Thanks also to Sandra Vince, Administrative Secretary, LSU Agricultural Center, for help with the preparation of this report and Viacheslav Sereda, Graduate Assistant, International Programs, LSU Agricultural Center, for data verification and analysis.

Members of Evaluation Team

Vinnitsa State Agricultural University: Grigoriy Loyanych, Ukrainian Project Coordinator, Natasha Fishchuk, Assistant Professor, Victor Mazur, Assistant Professor, Tanya Mulyk, Assistant Professor, Sasha Nedbalyuk, Assistant Professor, Vasily Petrechenko, Professor, Yuri Vanzhula, Assistant Professor, Sergei, Computer Programmer and Wanda Yamkovenko.

LSU Agricultural Center: Larry Brock, U.S. Project Coordinator, Paul Ivanicky, Project Liaison Officer, Lakshman Velupillai, Director, International Programs, and Satish Verma, Head, Organization Development.

Ukrainian Center for Private Farmer Training and Outreach
An Evaluation of the Center's Educational Impact on Farmers and Demographic Characteristics of Farmers

Rationale and Purpose

The USAID-funded Ukrainian Center for Private Farmer Training and Outreach, Vinnitsa Oblast, was officially inaugurated in October 1998 to assist private farmers and household plot owners (HPOs) improve agricultural production and marketing through an outreach education program. Over the last three years, the Center, established at Vinnitsa State Agricultural University (VSAU) with trained faculty at the University and in all raions, has organized education programs and activities in high-need subject matter areas and collaborated with agribusiness companies to provide farmers with farm inputs and information for on-farm demonstrations and ancillary education efforts. Since a comprehensive evaluation of the Center's education program for private farmers and HPOs has not been done, it was felt that an evaluation of educational impacts on these client groups would be valuable to demonstrate accountability and guide future program direction. Furthermore, when the project started in 1998, baseline information on farmers and the farming situation in the oblast was not collected in a systematic manner. The current evaluation addresses this lacuna. The information should help complement future programming by the Center.

Methodology

The evaluation design was influenced by input from various stakeholders of the Project/Center. Different stakeholder groups – private farmers, HPOs, University/raion specialists, raion and oblast administrators, World Laboratory staff, and faculty from national universities/academies- were brought together in a forum in January-February, 2001 to give their views of how they had interacted with the Center, what they expected from the Center, and what questions they would like to see answered in the proposed evaluation. This information was helpful in framing the evaluation, including the kinds of information,

which should be gathered. Two major questions to be addressed in the evaluation emerged as a result of these discussions: (a) what is the educational impact of the Center on private farmers and HPOs with regard to their involvement, learning, and actions?; (b) what is the demographic profile of private farmers and HPOs? Therefore, the evaluation was designed to find answers to these questions.

A survey instrument was developed to gather the information needed to answer these questions. The survey had questions dealing with participation of farmers in the Center's education programs, their reactions, the extent to which they learned and adopted new ideas and practices, and changes in their attitudes and aspirations as a result of contact with the Center. Survey questions also dealt with personal and farming characteristics of farmers, problems experienced in farming, and needs which, if satisfied, would make them better farmers.

A program logic model was used to address the first question. Applied to extension, this model hypothesizes that an education program directed at a target group can be likened to a chain of events wherein (1) inputs are used to conduct (2) activities in which the target group (3) participates and has (4) reactions, which lead to (5) changes in knowledge, attitudes, skills, and aspirations, (6) adoption of new ideas and practices learned in the program, and ultimately (7) social, economic, and environmental benefits to the community.

Appropriate indicators were included in the survey instrument for each event of the model. Information gathered in the survey on these indicators was analyzed by descriptive statistics (frequencies, percentages, and means) and is presented in the results section of this report. Path analysis will be used to test the hypothesis that the events in the model are linked in a linear sequence. The path analysis results are not included in this report. They are provided in a separate technical report. Demographic characteristics of farmers, the second question addressed in this evaluation, are included in this report as descriptive statistics (frequencies, percentages, and means).

There were 1,128 registered private farmers in the oblast as of March 1, 2001. The appropriate sample size to make generalizations to the population was calculated to be 228, with a 2% margin of error. To distribute equally the work of personal interviews among the Center's raion specialists, it was decided to draw a random sample of 10 farmers from the list of farmers in each raion. Thus, a total of 270 farmers comprised the study sample. Raion specialists were given intensive training for a day and a half on the personal interview technique, including practical tips and hands-on practice. Data were gathered in May-June 2001, with oversight from the Center's zone supervisors. Data were entered into a Microsoft Access file and analyzed by SPSS. Responses to open-ended questions were listed and translated into English by the Center's interpreter. These responses were categorized and summarized, and complement the quantitative information from responses to the fixed-choice questions.

HPOs were not surveyed since the Center has not had a specific, identifiable education program for this target group. Focus group interviews were conducted to determine HPO needs and problems for programming direction. This information is being analyzed separately for use by Center faculty.

Limitations

In evaluation practice, internal evaluations are regarded as less credible than external evaluations because program personnel could be biased in the design and implementation of the evaluation. While this could be a limitation, random sampling of farmers and intensive training and supervisory oversight of raion specialists during the interview process were measures taken to ensure a degree of rigor in the evaluation.

There could be some loss of the original meaning conveyed by the respondents when the farmers' Ukrainian language responses to the open-ended questions in the survey were translated into English.

Results

Part 1. Educational Impacts of the Center's Education Programs on Private Farmers

Participation of Private Farmers in the Center's Education Programs, 1998-2001

A majority of farmers (83.7%) first came into contact with the Center in 1998-99 (118, 43.7%) and 1999-2000 (108, 40.0%). This means that over two-fifths of the farmers in the oblast were involved in the Center's education programs in the first year of the Center's operation. Only a small number of farmers (14, 6.3%) first became involved in the Center's programs in its third year, 2000-2001.

The period October 1-September 30 represents the Center's program year for planning and reporting of education programs and activities. Participation of farmers in all education programs increased in the program year 1999-2000 compared to the program year 1998-99 (Table 1). This increase continued in 2000-2001 as well, except for field days and demonstrations. Field days and demonstrations are held in the summer months; hence participation figures in 2000-2001 (October 1-April 30) are incomplete and cannot be compared with previous years.

Table 1. Participation of Private Farmers in Education Programs of the Center

	Number and % of responding farmers		
Education Program	1998-99	1999-2000	2000-2001 (a)
Workshops attended	86 35.4%	205 79.8%	215 84.0%
Field days attended	14 5.9%	73 31.4%	22 9.2%
Demonstrations attended	7 2.9%	55 22.9%	34 14.2%
Visits by specialists to farmers	118 46.6%	209 79.5%	257 97.0%
Visits by farmers to Center Office	92 36.5%	208 78.5%	249 93.3%

(a) For the period October 1, 2000-April 30, 2001

In addition to the above programs, farmers were asked to indicate their involvement with mass media activities of the Center. A majority of farmers had read the Center's agricultural publications (226, 83.7%) and the newspaper farmers' library series (217, 80.4%). But, only a small number of them listened to the Center's radio broadcasts (49, 18.1%) or watched the Center's television shows (23, 8.5%)

Reactions of Participating Private Farmers to the Center's Education Programs

Over 80% of participating farmers were very satisfied or satisfied with the information on agricultural, legal, credit and other topics they received in the Center's education programs (Table 2).

Table 2. Satisfaction Level of Private Farmers with Information Received in Education Programs of the Center

	Number and % of responding farmers		
Education program	Very satisfied	Satisfied	Not satisfied
Workshops	64 25.9%	175 70.9%	7 2.8%

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Field days	23 21.3%	67 62.0%	18 16.7%
Demonstrations	19 18.1%	69 65.7%	17 16.2%
Visits by specialists to farmers	42 17.0%	191 77.0%	14 6.0%
Visits by farmers to Center Office	56 22.3%	187 74.5%	8 3.2%

Compared to the high satisfaction levels with the above programs, fewer farmers were satisfied with radio broadcasts (62.0%) and television shows (43.7%).

Nearly all farmers (259, 98.1%) felt that the information received in the Center's education programs was very practical (52, 19.7%) or practical (207, 78.4%).

Learning of New Ideas and Skills as a Result of Participation in the Center's Formally Organized Education Programs

Farmers were asked to indicate (a) if they had attended formally organized education programs of the Center in 14 different subject matter areas, and (b) the extent to which they learned new ideas and skills in these areas as a result of their participation. Formally organized education programs were workshops, seminars, demonstration meetings, and field days.

Between 33 and 77% of farmers had attended formally organized education programs in the different subject matter areas. More farmers attended programs on land titles, economic aspects of farming, and legal issues than programs on obtaining credit, forming agricultural cooperatives, and livestock production technology (Table 3). Many factors can influence participation, such as farmer interest, when and where programs are held, transportation, timing, and convenience.

Table 3. Participation of Farmers in Formally Organized Education Programs

	Number and % of farmers	
Subject matter education program	Participated	Did not participate
Plant protection technology	208 77.0%	62 23.0%
Tax laws, rules, and regulations	201 74.4%	69 25.6%
Crop production technology	199 73.7%	71 26.3%
Agricultural marketing and markets	195 72.2%	75 27.8%
Legal issues in farming	189 70.0%	81 30.0%
Economic aspects of farm business and management	171 63.3%	99 36.7%
How to obtain land titles	166 61.5%	104 38.5%
VSAU Credit Union	162 60.0%	108 40.0%
Farm machinery, equipment, and supplies	143 53.0%	127 47.0%

Livestock production technology	128 47.4%	142 52.6%
Forming and managing agricultural cooperatives	119 44.1%	151 55.9%
Vegetable production technology	111 41.1%	159 58.9%
Obtaining credit for farm operations	98 36.3%	172 63.7%
Fruit production technology	89 33.0%	181 67.0%

Farmers who had attended formally organized education programs as well as those who were visited by raion/university specialists and/or visited the Center/raion office were asked to indicate the extent to which they learned new ideas and skills as a result of these interactions. Overall, more than 75% of them said they learned many or some new ideas and skills in the different subject matter areas (Table 4).

Table 4. Extent to Which Farmers Reported Learning New Ideas and Skills in Different Subject Matter Education Programs

Subject matter education program	Number and % farmers reporting		
	Learned many new ideas and skills	Learned some new ideas/skills	Did not learn any new ideas/skills
Legal issues in farming	60 31.7%	119 63.0%	10 5.3%
Tax laws, rules, and regulations	72 35.8%	122 60.7%	7 3.5%
How to obtain land titles	67 40.4%	84 50.6%	15 9.0%
Farm business economics	60 35.1%	93 54.4%	18 10.5%
Obtaining credit for farm operations	30 30.6%	45 45.9%	23 23.5%
Crop production technology	69 34.7%	112 56.3%	18 9.0%
Livestock production technology	44 34.4%	72 56.3%	12 9.4%
Vegetable production technology	33 29.7%	62 55.9%	16 14.4%
Fruit production technology	15 16.9%	56 62.9%	18 20.2%
Farm machinery, equipment, supplies	40 28.0%	86 60.1%	17 11.9%
Forming/managing agricultural coops	32 26.9%	68 57.1%	19 16.0%
VSAU Credit Union	46 28.4%	99 61.1%	17 10.5%
Plant protection technology	75 36.1%	120 57.7%	13 6.3%
Agricultural marketing and markets	64 32.8%	117 60.0%	14 7.2%

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To examine these data further, the number of new ideas and skills learned in the different subject matter areas and the total and average number of farmers who said they had learned were determined and are presented in Table 5. Nearly 90 new ideas and skills were reported learned. These ideas and skills were mentioned a total of 316 times by farmers, or each idea was mentioned on the average 3.6 times. The table also gives a few examples of ideas and skills learned. A more detailed list of examples follows in Table 6.

Table 5. Number of Ideas and Skills Learned in Subject Matter Areas, Total and Average Number of Farmers Who Reported Learning, and Examples of Specific Ideas and Skills Learned

Subject Matter Area	Number of Ideas/Skills Learned	Farmers Reporting Learning			Examples of ideas and skills learned
		Total (a)	Average	Range	
Crop technology	19	90	4.7	1-10	Intensive technology of spring and winter grain production, sugar beets; Crop rotation; new soil cultivation techniques
Vegetable technology	13	27	2.1	1-9	Potato production/varieties; Vegetable crops transplants
Plant protection	10	46	4.6	1-14	How to apply pesticides to different crops; new chemicals
Livestock technology	9	18	2.0	1-5	Intensive hog production; Aquaculture; Protein feed mixes
Economic aspects of farming	7	37	5.3	1-15	Farm accounting; How to make business plans; Farm labor salaries and agreements
Legal issues in farming	6	19	3.2	1-11	General legal questions/issues; How to develop bylaws for a private farm
Tax laws, rules, and regulations	5	22	4.4	1-8	Farm taxation system; Benefits of fixed tax in agriculture; Timely tax payments and reports
Land titling	4	16	4.0	1-9	Procedures for obtaining land titles; Land reform laws
Agricultural cooperatives	4	13	3.3	1-7	Organization of farmers and service cooperatives; Legal and organizational issues
Fruit production	3	4	1.3	1-2	Use of Holland technology for apples: Intensive orchard growing
Farm equipment, machinery	3	3	1.0	---	Construction of buildings for hog/cattle production; Calibration of ploughs
Marketing and markets	3	6	2.0	1-4	Existing and new markets for agricultural products; Wheat markets
Farm credit	2	17	8.5	4, 13	VSAU Credit Union

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					membership, procedures;
Totals	88	318	3.6	----	---------- -

(a) Not all farmers in Table 4 provided examples. Hence the difference in number of farmers in Table 4 and Table 5

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Farmers who learned new ideas and skills were asked to give examples of things they had learned. Specific ideas and skills learned and the number of farmers reporting are presented in Table 6 according to the different subject matter areas.

Table 6. Specific Ideas and Skills Reported to Have Been Learned by Farmers in Different Subject Matter Areas

Ideas/skills learned	Number of farmers reporting
Legal Issues in Farming	
General legal questions and issues	11
Labor legislation	3
How to develop bylaws for a private farm	2
How to lease state assets	1
New techniques for land aggregation	1
Legal questions regarding registration of a farm	1
Tax laws, rules, and regulations	
Farm taxation system	8
Benefits of fixed tax system in agriculture	8
Tax structure for private farmers	3
Timely tax payments and reports	2
Taxes on labor salaries	1
Land titling	
Procedures for obtaining land titles (application, etc.)	9
Land reform laws	4
Laws and rules on leasing land and making payments	2
Land inheritance law	1
Economic aspects of farm business and management	
Farm accounting	15
How to make business plans	9
Economics of starting and managing a private farm	4
Farm record keeping/Euro standard	4
Farm labor salaries and agreements	3
How to write agreements	1
How to make farm production plans	1
Credit for farm operations	
VSAU Credit Union membership, procedures etc.	13
How to apply for credit	4
Agricultural Cooperatives	
Organization of farmers cooperatives	7
Organization of service cooperatives	4
Legal and organizational issues in cooperatives	1
Value of agricultural cooperatives	1

Crop production technology	
Intensive technology of spring and winter grain crop production	13
Improved technology of grain crop production	10
New agricultural production ideas (geese, ducks, etc.)	10
New soil cultivation techniques (no till, low cost, ploughing, straw, selective packing)	10
Improved technology of winter wheat production	9
Intensive technology of sugar beets production	8
Crop rotation	6
Growth stimulators (Kleps) in crop production	4
Planting cover crops to increase soil fertility	4
Planting cover crops to increase soil fertility	4
Corn production (hybrids, planting with zero cycle, loading of planter)	3
Growing sugar beets transplants	2
Planting of locally tested varieties and high quality seed	2
New varieties of buckwheat and barley	2
New herbicides for corn, winter wheat	2
Use of elite varieties and their cultivation	1
Organic fertilizer from cattle operation to replace inorganic fertilizer	1
Minimum acreage for efficient grain, sugar beets, sunflower operation	1
Planting buckwheat in north-south rows to increase yield	1
Overlapping winter wheat in crosswise manner	1
Livestock Production	
Intensive hog production	5
New production and processing technology	3
Aquaculture (building a pond, fish raising techniques)	2
Breeding livestock	2
Growing of feed beans, feed beets	2
Growing and keeping heifers	1
Protein feed mixes	1
Use of green chop as a feed ration ingredient	1
Cattle production technology (Holland)	1
Vegetable production	
Potato production technology	9
Improved vegetable production technology	4
Intensive technology of growing peas	2
Growing vegetable crops transplants	2
New potato varieties	2
Growing soup beans	1
Protection of vegetable crops from pests	1
Cabbage, tomatoes, and potato technology	1
New insecticides for vegetable production	1
Evaluating quality of vegetables	1
Growing early ripening peas	1
Intensive technology for growing cucumbers	1
Greenhouse vegetable production	1

Fruit Production	
Use of Holland technology for apples	2
Intensive technology for producing berries	1
Intensive orchard growing	1
Farm Equipment, Machinery, and Supplies	
Construction of buildings for hog and cattle production	1
Calibration of ploughs	1
How to purchase agricultural machinery	1
Plant Protection	
Application of new chemicals	14
Plant protection technologies	12
How apply pesticides for different crops	8
Integrated pest management (Integral plant protection)	3
Buy chemicals from reputed dealers not from local market	2
Use of Roundup	2
Effectiveness of "Harness" for sunflower	2
Applying "Swaziland Super" to sugar beets	1
Applying herbicides to rows under corn	1
Selective cultivation of weeds	1
Marketing and Markets	
Existing and new markets for agricultural products	4
Information on where to buy cattle	1
Markets for wheat	1

Adoption of New Ideas and Skills Learned

Farmers who learned new ideas and skills were asked if they had adopted some of those ideas and skills. Seventy-three percent of them indicated they had adopted one or more new ideas or skills, and 27% said they had not adopted. Reasons for not adopting and the number of times a reason was mentioned are given:

Reason for not adopting new idea or skill	Number of times mentioned
Lack money	22
New in farming	11
Lack needed equipment	6
Need more information to make better choice	4
Small farming operation	3
Rely on own experience or traditional methods	3
Started working with Center only recently	2
Do not have land title/share certificate	1
Lack of opportunity	1
Planning to adopt	1

Farmers who had adopted new ideas or skills were asked to give examples of things they had adopted. Over 75 different ideas or skills were reported. A few representative examples in the farmers' own words illustrate the variety and depth of ideas and skills adopted:

- In the beginning, I did not believe that no-till cultivation of soil recommended by the Center is an efficient way of killing weeds. But I tried the practice on my farm and it worked.
- On the recommendation of university specialists I began growing feed beans.
- I changed my way of keeping farm records.
- The Center's specialists helped me in the design and construction of livestock barns, and hog and cattle production and management.
- I used to work as the director of a collective farm, and my experience told me that collective farms did not have any future. So, I started my private farm with 49 hectares of my own land and 60 hectares of land leased from my relatives.
- I learnt the law of land reform, and rented 350 hectares from 100 shareholders.
- I transferred to the system of paying fixed tax on agriculture because of its benefits.
- I have been using intensive technology in my orchard.
- I have started thinking and behaving like an entrepreneur in the free market system.
- I started to keep proper records and adopted a recommended system of farm accounting.
- I obtained credit from the credit union and made my own business plan to meet their requirement.
- I calculate income showed by each crop. I also use new technologies of crop production.
- I have applied the recommended system of rotating sugar beets, winter wheat, and sunflower to maintain soil fertility.
- Because of new technology for wetland I can now grow crops on it.
- After harvesting summer wheat, I immediately planted winter wheat (without tillage). I overlapped it in a crosswise manner and applied mineral fertilizers. As a result, I have 600-700 productive stalks per square meter.
- I started to apply fertilizer along with seeds at the time of row planting. This reduced the amount of fertilizer needed by half.
- At the very beginning, I requested the Center for information on the documents and procedures needed to start farming. A specialist from the Center helped me to develop the bylaws or my farm.
- I installed and began operation of oil crushing facilities and am processing sunflower and canola.
- With the help of the raion specialist we developed a crop rotation scheme for my farm.
- Three of us farmers got together and organized a cooperative.
- Planted new varieties of potatoes and used new, recommended pesticides.
- I started paying fixed tax on my farm. My wife attended the Center's training program in accounting. Now, she has introduced a simplified system of accounting for our farm.
- I am using fungicides that I did not use before.
- I am able to write and maintain books of labor records for the employees on our farm. I began hog production with advice and help from the Center's specialists. I joined the credit union.
- I started using herbicides, joined the credit union, and plan to organize a farm service cooperative.

Information Sources Used by Farmers

Farmers were asked to indicate which sources they had used to get information in the same 14 subject matter areas. The Center was the information source most used by farmers in all subject matter areas, 85.6% to 54.1% of them indicating this to be the case. In comparison, the other information sources - College, University or Research Station; the State's Agro-industrial Complex; Private Companies; Other Farmers – were mentioned by small numbers of farmers (Table 7).

Table 7. Number and Percent of Farmers Using Different Sources to

Get Information in Different Subject Matter Areas

Subject matter area	Center	Other information sources			
		College, University, Research Station	Agro-industrial Complex	Private Company	Other Farmers
Agricultural cooperatives	231 85.6%	30 11.1%	2 .7%	2 .7%	5 1.9%
Fruit production technology	226 83.7%	28 10.4%	6 2.2%	4 1.5%	6 2.2%
VSAU Credit Union	213 78.9%	53 19.5%	1 .4%	1 .4%	2 .7%
Livestock production	211 78.1%	36 13.3%	17 6.3%	1 .4%	4 1.5%
Vegetable production	211 78.1%	32 11.9%	12 4.4%	1 .4%	14 5.2%
Farm credit	193 71.5%	22 8.1%	28 10.4%	12 4.4%	15 5.6%
Economic aspects of farming	189 70.0%	50 18.5%	20 7.4%	5 1.9%	6 2.2%
Farm machinery, supplies	185 68.5%	39 14.4%	15 5.6%	8 3.0%	23 8.5%
Tax laws, rules and regulations	174 64.4%	31 11.5%	18 6.7%	16 5.9%	31 11.5%
Land titling	164 60.7%	27 10.0%	56 20.7%	3 1.1%	20 7.4%
Agricultural marketing and markets	168 62.2%	21 7.8%	9 3.4%	36 13.3%	36 13.3%
Legal issues in farming	162 60.0%	33 12.2%	24 8.9%	27 10.0%	24 8.9%
Plant protection	150 55.6%	44 16.3%	47 17.4%	22 8.1%	7 2.6%
Crop production	146 54.1%	60 22.2%	38 14.1%	7 2.6%	19 7.0%
All subjects	**69.4%**	**13.4%**	**7.8%**	**3.8%**	**5.6%**

Use of Information Support System

Seventy-one percent of farmers reported using the Information Support System (ISS) within the last 12 months. ISS users sought information four times on the average during that period. When asked if the information provided by ISS had answered their questions, 85% of the users said always or most of the time. When those who had not used ISS were asked why, one-half said they did not have a need, and only 13 farmers said they did not know about ISS.

Involvement in the Center-Agribusiness Collaborative Program

Thirty-five percent of private farmers indicated they had been involved in the Center-Agribusiness Collaborative Program. A number of farmers had been assisted by agribusiness companies which had provided them with such inputs as new seed varieties, pesticides, fertilizers, and the growth stimulator, "Kleps", for crop demonstrations on their farms. Other ways in which farmers reported they had been involved in the program were (a) receiving specific information on vegetable production, agronomic crop production, land cultivation technology, business planning, soil fertility, seeds, plant protection, agricultural marketing, land cultivation, and inputs of different companies (29 mentions); (b) receiving useful and interesting general information about various aspects of agricultural production and marketing (15 mentions); (c) buying needed inputs from agribusiness companies (11 mentions); (d) making profits by following recommendations of the Center-agribusiness companies (4 mentions).

Changes in Attitudes and Aspirations

It appears that the establishment and work of the Center in the oblast has had a positive influence on private farmers as expressed in their views of market-oriented and democratic changes in Ukrainian agriculture, life and society, and the world in general. This can be seen from the high levels of agreement with the following statements conveying a sense of personal independence, optimism, and positive feelings toward various aspects of life (Table 8).

Table 8. Extent to Which Farmers Agreed with Statements Expressing a Positive View of Various Aspects of Life

Because of my association with the Center's education programs	Number and % of farmers		
	Agree	No opinion	Disagree
1 I know that if farmers band together they can be successful in ways they cannot be individually	252 96.6%	6 2.3%	3 1.1%
2. I believe that science-based technical information on raising crops and livestock is a must for farmers	246 94.3%	5 1.9%	10 3.8%
3. I can rely on raion and university specialists to give me sound advice	240 93.8%	11 4.3%	5 2.0%
4. I want to be a successful farmer following scientific methods and making a good income but I do not have the resources to accomplish that goal	218 93.2%	9 3.3%	7 3.0%
5. I believe the next generation should be better than ours and the best way for that is through education	244 94.2%	8 3.1%	7 2.7%

Table 8. (Continued)

Because of my association with the Center's education programs	Number and % of farmers		
	Agree	No opinion	Disagree
6. My hopes for a better life for my family have been raised	214 82.9%	30 11.6%	14 5.4%
7. I am making informed decisions in my farming operations and my personal life	195 81.9%	35 14.7%	8 3.4%
8. I am confident that we have a bright future in our oblast	196 77.5%	43 17.0%	14 5.5%

64

9. My whole outlook on life and the world has changed	174 71.6%	38 15.6%	31 12.8%
10. While there may be risks in the new private enterprise system it is a necessary and good thing for agriculture	165 64.5%	52 20.3%	39 15.2%
11. I feel that collective farms offered a sense of security which the new private enterprise system does not	49 19.1%	63 24.5%	144 56.0%
12. I have become more trusting of government	54 21.2%	67 26.3%	134 52.5%
13. I want to blame others when things go wrong	30 11.8%	27 10.6%	197 77.6%

Summary

All registered private farmers in the oblast have been reached through formally organized education programs and interpersonal contacts of the Center.

Private farmer participation in the Center's programs has increased over the years of the Center's operation and farmers are generally satisfied with the quality and value of the information they receive.

Most all private farmers have learned a variety of new ideas and skills from exposure to technical, legal, and organizational information presented in the Center's education programs.

Three-fourths of the private farmers learning new ideas and skills have put into practice one or more ideas or skills in agricultural production, management, marketing, credit, and organization.

The Center is preferred as a source of technical, legal, and organizational information over the ministry, private companies, colleges and universities, or other farmers.

The Information Support System (ISS) of the World Laboratory has been used by a majority of private farmers for information on questions about production, marketing, and management.

A majority of private farmers have benefited by being involved in some way in the Center's collaborative work with private agribusiness companies.

Interaction with the Center appears to have had a positive influence on the general outlook of private farmers toward democratic and market-oriented changes in Ukrainian agriculture, society, and life.

Part 2. Demographic Characteristics, Needs, and Problems of Private Farmers

Personal Characteristics of Private Farmers

Age. Table 9 gives the age distribution of private farmers in the oblast. Nearly two-thirds of the farmers were in the age groups 41-50 (33.8%) and 31-40 (30.8%). There were very few young farmers (7.1% 20-30 years old) and elderly farmers (6.4% over 60 years). The average age was 44.29 years, and the range 20-76 years.

Table 9. Age Distribution of Private Farmers in Vinnitsa Oblast

Age Category (years)	Number and % of farmers

65

	n[a]	%
20-30	19	7.1
31-40	83	30.8
41-50	91	33.8
51-60	59	21.9
Over 60	17	6.4
Totals	269	100.0

(a) 1 farmer did not respond
Mean Age = 44.29 years
Standard deviation = 10.39
Range = 20-76 years

Gender. Table 10, which gives a breakdown by gender, shows that farmers were predominantly male (94.4%).

Table 10. Gender of Private Farmers in Vinnitsa Oblast

Gender	Number and % of farmers	
	n	%
Male	255	94.4
Female	15	5.6
Totals	270	100.0

Education Level. Table 11 shows that all farmers had a high school education and had achieved higher levels. Most of them had a two-year or four-year diploma, 27.2% and 47.7% respectively. Fewer farmers had a vocational degree (3.4%) or a master's degree (.7%)

Table 11. Education Level of Private Farmers in Vinnitsa Oblast

Education Level	Number and % of farmers	
	n[a]	%
High School	57	21.3
Two-year diploma	73	27.2
Four-year degree	127	47.4
Masters degree	2	0.7
Ph.D.	0	0.0
Vocational Degree	9	3.4
Totals	268	100.0

(a) 2 farmers did not respond

Farming Characteristics of Private Farmers

Number of Years Farming. Farmers had been farming their own land for an average of 4.72 years. The range was less than 1 to 10 years, the latter corresponding with the advent of independence and the right to private farm ownership. Nearly one-third of farmers had just begun farming (1 year or less) and a similar proportion had been farming for 8-10 years. The remaining one-third had been farming for 2-7 years (Table 12).

Table 12. Number of Years Private Farmers in Vinnitsa Oblast Reported Being in Farming

Number of Years in Farming	Number and % of farmers	
	n[(a)]	%
<1	3	1.2
1	70	27.1
2-3	31	12.0
4-5	28	10.8
6-7	46	17.8
8-9	73	28.3
10	7	2.7
Totals	263	100.0

(a) 12 farmers did not respond
Mean years farming = 4.90
Range = <1-10
Standard Deviation = 3.16

Major Income Source. About 81 percent of farmers indicated that farming was their major source of income (Table 13).

Table 13. Major Income Source of Private Farmers in Vinnitsa Oblast

Major income source	Number and % of farmers	
	n[(a)]	%
Farming	216	80.6
Other occupations	52	19.4
Totals	268	100.0

(a) 2 farmers did not respond

The remaining 19.4% said their major source of income was from the following sources:

Income sources other than farming	Number of times mentioned
Crop and animal products from household plots	12
Salary/pension	11
Agricultural enterprise (accountant, agronomist, partner)	3
College, school teacher	3
Hired labor	2
Private business	2
Manager of private farm	1
Legal consultant	1
Medical doctor	1
Plant protection inspector	1

Farmer Participation in Organizations and Groups. Over two-thirds of the farmers indicated that they belonged to a farmers' or growers' association (68.5%). Only 3.4% were members of a farm collective, 1.6% belonged to a civic/social group, and only one farmer belonged to a women's association (Table 14).

Table 14. Vinnitsa Oblast Private Farmers Belonging to Organizations or Groups in the Community, Raion, or Oblast

Organization/Group	Number of Farmers	% of farmers (n=270)
Farmers/Growers Association	185	68.5
Farm Collective	9	3.4
Civic/Social Group	4	1.6
Women's Association	1	.4

Belonging to civic and social groups is apparently not a predominant cultural norm in Ukraine. But belonging to a farmers group is expected to bring some benefits to members. Benefits of such an affiliation cited by farmers included (a) communication among farmers from sharing information on a variety of subjects such as legislation, taxes, marketing, and exchanging new ideas and experiences (75 mentions); (b) cooperation among farmers for buying inputs and marketing their products (16 mentions); (c) receiving assistance in their farming operations for keeping records, marketing products, financial counseling, and sharing agricultural machinery (8 mentions). On the negative side, there were 17 skeptics who felt that a farmers' association provided no tangible benefits to farmers.

Table 15 shows that most farmers who did not belong to a farmer's organization were interested in belonging to this group to be able to purchase inputs or market farm products. Only a small number of farmers were interested in volunteering to serve on a research-extension advisory panel (41.3%)

Table 15. Reasons Given by Vinnitsa Oblast Private Farmers for their Interest in Joining a Formal Farmers' Association

Reason	Number and % of farmers					
	Yes		No		Total	
	n	%	n	%	n	%
To purchase farm inputs	94	85.5	16	14.5	110	100.0
To market farm products	91	81.3	21	18.8	112	100.0
To serve on an advisory panel to research and extension personnel	33	41.3	47	58.8	80	100.0

Land Tenure Status. Table 16 shows that farmers owned, leased, or held land under other conditions. More farmers owned land, i.e., held a certificate of ownership (87.0%) than leased land (38.5%). Fourteen farmers reported that their farmland was being operated under other tenure conditions, which they did not specify.

Table 16. Land Tenure Status of Private Farmers in Vinnitsa Oblast

Tenure status	Number and % of farmers	
	n	% (n=270)
Own (have certificate)	235	87.0
Lease	104	38.5
Other	14	5.2

Hectares of Farmland Owned. The 235 farmers in the study sample who owned farmland had a total of 6051.13 hectares, with the average at 26.23 hectares, and the range 1-130 hectares. Nearly one-fourth of the farmers owned 1-10 hectares, another fourth 11-20 hectares. A small number of farmers owned over 50 hectares (5.5%), while 16.6% owned 41-50 hectares. The rest of the farmers were about equally distributed among the categories of 21-25 hectares (8.5%, 26-20 hectares (9.4%) and 31-40 hectares (10.2%). Table 17 presents the data on number of hectares owned by categories.

Table 17. Number of Hectares of Farm Land Owned by Private Farmers in Vinnitsa Oblast

Number of Hectares owned	Number and % of farmers	
	n	%
1-5	30	12.8
6-10	24	10.2
11-15	32	13.6
16-20	31	13.2
21-25	20	8.5
26-30	22	9.4
31-40	24	10.2
41-50	39	16.6
Over 50	13	5.5
Totals	235	100.0

Total hectares owned = 6051.13; Mean hectares owned = 26.23
Range = 1-130; Standard Deviation = 19.75

Hectares of Farmland Leased. A smaller number of farmers in the study sample leased land (n=104) compared to farmers who owned land (n=235). But, one-third more farmland was under lease than that which was owned – a total of 8224.32 hectares. The average leased holding was 79.08 hectares and the range 1-1350 hectares. Table 18 presents farm holdings held under lease by size of holding in different categories. There were a few large farm holdings (over 60 hectares), which were being leased (n=22, 21.2%). But, for the most part, farmers leasing land holdings less than 60 hectares in size were about evenly distributed among the different categories.

Table 18. Number of Hectares of Farm Land Leased by Private Farmers in Vinnitsa Oblast

Number of Hectares leased	Number and % of farmers	
	n	%
1-5	13	12.5
6-10	11	10.6
11-15	8	7.7
16-20	13	12.5
21-30	13	12.5

31-40	7	6.7
41-50	10	9.6
51-60	7	6.7
61-170	10	9.6
171-250	6	5.8
Over 250	6	5.8
Totals	104	100.0

Total hectares leased = 8224.32
Mean hectares leased = 79.08
Range = 1-1350
Standard Deviation = 180.69

Commercial Crop Production. The largest proportions of farmers grew wheat (58.3%), barley (50.0%), and sugarbeet (45.1%) for commercial purposes. Buckwheat was raised by 29.5% of farmers. Considerably fewer farmers raised forages (15.2%), sunflower (16.3%), and vegetables (11.5%). Rye was grown by 2.9% of farmers and fruits by only 2 farmers. Table 19 shows the data on number of farmers who grew various crops for commercial purposes.

Table 19. Crops Grown for Commercial Purposes by Private Farmers in the 2000 Season

	Number and % of farmers					
	Growing crop		Not growing crop		Total	
Crop[a]	n	%	n	%	n[b]	%
Wheat	147	58.3	105	41.7	252	100.0
Barley	122	50.0	122	50.0	244	100.0
Sugarbeet	111	45.1	135	54.9	246	100.0
Buckwheat	74	29.5	174	70.5	251	100.0
Forages	37	15.2	207	84.8	244	100.0
Sunflower	40	16.3	205	83.7	245	100.0
Vegetables	28	11.5	216	88.5	244	100.0
Rye	7	2.9	238	97.1	245	100.0
Fruits	2	.8	240	99.2	242	100.0

(a) No farmer grew soybeans.
(b) Difference between sample number (270) and number of respondents in total column represents farmers who did not respond to this item.

The total number of hectares and the average number of hectares under various commercial crops are shown in Table 20. Wheat had the largest area – 3054.70 hectares – followed by barley (2049.60 hectares), and sugarbeet (1149.96 hectares). The smallest areas were in vegetables (132.16 hectares) and rye (198.70 hectares). Buckwheat (905.02 hectares), forages (873.94 hectares), and sunflower (645.60 hectares) had intermediate cultivation areas.

Table 20. Number of Hectares of Crops Grown for Commercial Purposes by Private Farmers in the 2000 Season

Crop	Number of Farmers	Number of Hectares			
		Total	Mean	Range	SD
Wheat	147	3054.70	20.78	1-400	42.28
Barley	122	2049.60	16.80	1-177	22.95
Sugarbeet	111	1149.96	10.36	1-117	14.42
Buckwheat	74	905.02	12.23	1-60	11.02
Forages	37	873.94	23.62	1-350	70.20
Sunflower	40	645.60	16.14	1-250	40.44
Rye	7	198.70	28.38	1-108	36.68
Vegetables	28	132.16	4.72	1-22	4.49

Commercial Animal Production. Table 21 gives the number of farmers raising animals for commercial purposes. One-third of the farmers raised pigs (35.5%), 29.6% raised dairy-beef animals, and 12.5% had poultry.

Table 21. Animals Raised for Commercial Purposes by Private Farmers

Species	Number and % of farmers					
	Raising		Not Raising		Total	
	n	%	n	%	n[a]	%
Pigs	91	35.5	165	64.5	256	100.0
Dairy-Beef	76	29.6	181	70.4	257	100.0
Poultry	32	12.5	225	87.5	257	100.0

(a) Difference between sample number (270) and number of respondents in total column represents farmers who did not respond to this item.

Use of Agricultural Machinery. Mechanized agricultural equipment used by farmers in their farming operations is shown in Table 22. A majority of farmers were using tractors (86.0%), cultivators (54.6%) and planters (46.5%). Harvesters were being used by 20.2% of farmers and sprayers by 13.7%.

Table 22. Agricultural Machinery Used by Private Farmers in Farming Operations

Agricultural Machinery	Number and % of farmers					
	Using machinery		Not using machinery		Total	
	n	%	n	%	n[(a)]	%
Tractors	227	86.0	37	14.0	264	100.0
Cultivators	142	54.6	118	45.4	260	100.0
Planters	120	46.5	138	53.5	258	100.0
Harvesters	52	20.2	205	79.8	257	100.0
Sprayers	35	13.7	221	86.3	256	100.0

(a) Difference between sample number (270) and number of respondents in total column represents farmers who did not respond to this item.

Farmers were asked how many units of each item of tractor-operated equipment they were using in their farming operation. The data in Table 23 show the total number, the average, and the range of these items of equipment. As might be expected, the most numerous item was tractors (445). Cultivators (241) and planters (196) were the next most numerous items. Items least in number were harvesters (67) and sprayers (44). Each farmer using the different items had at least one unit of the item, with the upper limits varying - 3 for harvesters and 22 for cultivators.

Table 23. Number of Units of Agricultural Machinery Used by Private Farmers in their Farming Operation

Agricultural Machinery	Number of farmers	Number of Units in Use			
		Total	Mean	Range	SD
Tractors	227	445	1.96	1-18	1.81
Cultivators	142	241	1.70	1-22	2.02
Planters	120	196	1.63	1-14	1.64
Harvesters	52	67	1.28	1-3	.54
Sprayers	35	44	1.26	1-4	.63

To follow up on equipment use, farmers were asked if they owned, leased, and/or shared the different items of equipment. The norm among most farmers was to own needed agricultural machinery and equipment for farming operations. In comparison, relatively few farmers leased or shared equipment.

Table 24. Status of Agricultural Machinery Used by Private Farmers in their Farming Operation

Agricultural Machinery	Number and % of farmers (n=270)			
	Owning	Leasing	Sharing	Total

	n	%	n	%	n	%	n	%
Tractors	205	75.9	11	4.1	9	3.3	225	83.3
Cultivators	131	48.5	10	3.7	6	2.2	147	54.4
Planters	107	39.6	7	2.6	7	2.6	131	48.5
Harvesters	43	15.9	7	2.6	2	.7	52	19.3
Sprayers	33	12.2	3	1.1	7	2.6	43	15.9

Procurement of Farm Inputs. Farmers were asked if they bartered or bought needed farm inputs – organic fertilizers, chemical fertilizers, pesticides, livestock feed, and fuel. They were also asked if they produced selected inputs on their own.

Bartering inputs (Table 25). Bartering among farmers was most prevalent for seed (19.6% of farmers), followed by chemical fertilizers (16.7%), organic fertilizers (10.4%), and pesticides (8.1%). Fewer farmers were engaged in bartering fuel (6.3%) and livestock feed (3.3%).

Table 25. Private Farmers Who Bartered Farm Inputs

Farm Input	Number and % of farmers engaged in bartering (n=270)	
	N	%
Seeds	53	19.6
Chemical Fertilizers	45	16.7
Organic Fertilizers	28	10.4
Pesticides	22	8.1
Fuel	17	6.3
Livestock Feed	9	3.3

Buying inputs (Table 26). Table 18 gives the number of farmers who bought farm inputs from various outlets (private company, government, and other farmers). A private company was the outlet most favored by farmers for buying all their farm inputs. Government was the second most used source, while other farmers was the choice of only a few farmers, except for seeds, 17.8% of farmers buying seeds from other farmers.

Table 26. Sources from which Private Farmers Bought Farm Inputs

Input	Number and % of farmers buying farm inputs (n=270)					
	From private company		From government		From other farmers	
	n	%	n	%	n	%
Organic Fertilizers	99	36.7	26	9.6	4	1.5
Chemical Fertilizers	172	63.7	55	20.4	12	4.4
Seeds	153	56.7	51	18.9	48	17.8
Pesticides	143	53.0	58	21.5	5	1.9
Livestock Feed	24	8.9	6	2.2	2	.7
Fuel	167	61.9	79	29.3	5	1.9

Producing own inputs (Table 27). Roughly one-fourth of farmers produced selected farm inputs. Seeds were produced by 29.6% of farmers, livestock feed by 26.7%, and organic fertilizers by 22.6%

Table 27. Private Farmers Who Produced Own Farm Input

Input	Number and % of farmers producing own inputs (n=270)	
	N	%
Seeds	80	29.6
Livestock Feed	72	26.7
Organic Fertilizers	59	22.6

Farm Inputs Assistance. The types of assistance farmers received on farm inputs were either information about inputs or the actual inputs themselves. Two-fifths of the farmers indicated they received information (41.9%), and nearly one-fifth said they received actual inputs (18.9%) (Table 28). Farmers did not reveal the sources from which these types of assistance were received.

Table 28. Farm Inputs Assistance Received by Private Farmers in Vinnitsa Oblast

	Number and % of farmers			
Type of Assistance	Receiving Assistance		Not Receiving Assistance	
	n	%	n	%
Information about inputs	113	41.9	157	58.1
Actual inputs	51	18.9	219	81.1

Obtaining Credit. A majority of farmers (78.4%) said they were unable to get credit to buy farm inputs. Reasons for inability to get credit included (a) excessively high interest rates (68 mentions); (b) lack of collateral or high collateral requirements (51 mentions); (c) Unfavorable lending institutions/conditions (18 mentions); (d) unavailability of credit or bank refusals (16 mentions); (e) bureaucracy and complicated procedures (8 mentions); (f) unstable credit policies (1 mention). A few farmers (17) indicated they had personal savings and did not need to borrow or did not want to run the risk of not being able to repay their debt.

Farmers were generally dissatisfied with the credit terms on which they had taken out farm loans. Short term interest rates for loans less than a year ranged between 20-40% , and long term interest rates for loans over a year ranged from 5 to 19%. If a farmer had collateral the rate was reasonable given market conditions; without collateral, however, loans were out of reach because of the exorbitant interest rate.

Crop Storage Facilities. A majority of farmers (74.5%) reported they did not have adequate facilities on their farm to store harvested crops. One-third did not have any storage facility. Only 25% indicated they had adequate storage facilities.

The types of storage indicated were barn or shed (25 mentions), grain storage (17 mentions), garage (11 mentions), hangar (7 mentions), covered on-ground (5 mentions), inside the home (2 mentions), bunker (1 mention), and gymnasium (1 mention). Forty-four farmers indicated they had a storage facility but did not specify what type.

On-Farm Processing. Only a small number of farmers (32, 12.3%) said they were processing crops and livestock into products on their farm (Table 29). Examples of products made included flour and bran (9 mentions), sunflower seeds and oil (9 mentions), cereals (7 mentions), meat and milk products (7 mentions), bread and bakery products (4 mentions), medicinal tea (1 mention), and canned cucumbers (1 mention).

Table 29. Crop or Livestock Products Processed on the Farm by Vinnitsa Oblast Private Farmers

Processed on Farm	Number and % of farmers	
	n[a]	%
Yes	32	12.3
No	229	87.7
Totals	261	100.0

(a) 9 farmers did not respond

Marketing Crop and Livestock Products. Marketing methods/outlets for crop and livestock products were reported:

Marketing method/outlet	Number of times mentioned
Private processor or agribusiness company	32
Sell myself in local market	28
Other farmers	23
Broker, wholesale dealer	19
Stock exchange	10
Barter	7
State companies	6
Former collectives	3

Two-thirds of the farmers reported that the terms of marketing their crop and livestock products to buyers was satisfactory (62.7%). As many as 32.4% said marketing terms were poor. Only a few farmers (4.9%) indicated marketing terms were good. Table 27 contains these data.

Table 30. Rating by Vinnitsa Oblast Private Farmers of Terms of Marketing Crop and Livestock Products

Rating of Marketing Terms	Number and % of farmers	
	n[a]	%
Good	12	4.9
Satisfactory	153	62.7
Poor	79	32.4
Totals	244	100.0

(a) 26 farmers did not respond

Exchanging Farm Machinery and Resources. The exchange of farm machinery and other resources among farmers for performing farm operations appears to be a common and accepted practice. Ninety-one percent of farmers said they obtained machinery and other resources from other farmers when needed, and 81.9% indicated they shared their resources with other farmers (Table 31).

Table 31. Farm Machinery or Other Resources Shared with or Obtained from Other Farmers as Reported by Vinnitsa Oblast Private Farmers

	Number and % of farmers			
Farm Machinery or Other Resources	Yes		No	
	n	%	n	%
Shared with other farmers[a]	212	81.9	47	18.1

75

Obtained from other farmers[b]	243	96.7	25	9.3

(a)11 farmers did not respond
(b)2 farmers did not respond

All types of farm machinery and resources were loaned and borrowed. It is interesting that farmers reported borrowing more items of farm machinery and resources than they gave on loan to other farmers. Also, the number of times each item was borrowed was significantly greater than the number of times the item was loaned. The data below show these exchange patterns:

Item	Times borrowed	Times loaned
Harvester	77	2
Cultivator	58	9
Tractor	56	5
Planter	56	4
Plough	34	3
Sprayer	31	1
Seeder (Sugarbeet, Grain)	22	0
Truck/car	10	1
Trailer	2	0

Table (Continued)

Item	Times borrowed	Times loaned
Seeds, fuel	2	0
Grain loader	1	0
Packing equipment	1	0
Labor for harvest	1	0

Preparation of Farm Plans. Over three-fourths of the farmers said they prepared farm production plans to guide them in their farm operations. Business plans were prepared by 28.4% of the farmers and marketing plans by 39.7% (Table 32).

Table 32. Types of Farm Plans Prepared by Vinnitsa Oblast Private Farmers

Type of Farm Plan	Number and % of farmers					
	Preparing plan		Not preparing plan		Total	
	n	%	n	%	n	%
Production plan	214	79.9	54	20.1	268[a]	100.0
Business plan	76	28.4	192	71.6	268[a]	100.0
Marketing plan	106	39.7	161	60.3	267[b]	100.0

(a) 2 farmers did not respond
(b) 3 farmers did not respond

Farmers who prepared farm plans of various types were asked if they made plans by themselves or got help from someone. An overwhelming majority (88.7%) said they made plans on their own (Table 33).

Table 33. Whether Vinnitsa Oblast Private Farmers Make Farm Plans by Themselves or Someone Helps Them

	Number and % of farmers	
	n[a]	%
Make plan myself	236	88.7
Someone helps me	30	11.3
Totals	266	100.0

(a) 4 farmers did not respond

Farmers who got help in preparing plans indicated the following sources:

Source of help in making farm plans	Number of times mentioned
Family members	17
Center and raion specialists	14
Accountant	3
Other farmers	2
Agricultural cooperative member	1
Farm collective specialist	1

Contact with Farm Collectives. Over four-fifths of the farmers reported maintaining contact with large reorganized farm collectives in their area for technical or other assistance (Table 34).

Table 34. Vinnitsa Oblast Private Farmers Who Kept Contact with Reorganized Farm Collectives in Their Area for Technical or Other Assistance

Contact with collectives	Number and % of farmers	
	n[a]	%
Yes	224	83.9
No	43	16.1
Totals	267	100.0

(a) 5 farmers did not respond

Only a few farmers responded to a follow-up question on how they felt about their relationship with the reorganized farm collective. Nine farmers felt the relationship should be maintained and improved, two farmers said the relationship was good and mutually helpful, and two farmers indicated that the farm collectives had helped them in preparing their farmland and harvesting the crop.

Problems and Needs of Private Farmers

Farmers were asked to indicate up to three problems they faced as farmers, and up to three needs which if met would make them better farmers. Responses to these questions were tallied and summarized. Tables 35 and 36 present this information for problems and needs, respectively, showing the ranking of categories of problems/needs, specific problems/needs and the number of times the categories/specific items were indicated.

Problems Faced by Private Farmers (Table 35). Vinnitsa private farmers expressed many and varied problems they face as farmers. The most significant problems faced were securing optimum, reasonably priced, quality farm inputs and the consequences of not using appropriate recommended production practices. Obtaining credit on reasonable terms was the second most important problem, followed by the

lack of or inability to operate needed agricultural machinery and equipment. Inadequate financial resources, marketing difficulties, and government and bureaucratic barriers were also considered to be significant constraints.

Table 35. Problems Vinnitsa Private Farmers Perceive They Face as Farmers

Rank by category	Problems category	Specific problems (number of mentions)	Number of mentions
1	Agricultural production and processing, and technology	Lack, high cost, and uncertain quality of, and lack of support in obtaining needed farm inputs – fertilizers (16), fuel (7), seeds (5), finances and other resources (6), pesticides (13) , transport (1), all inputs (7)	61

Table 35. (Continued)

Rank by category	Problems category	Specific problems (number of mentions)	Number of mentions
1	Agricultural production and processing, and technology	Farmers following inappropriate or traditional production practices in maintaining soil fertility/fertilization (17), farm products storage facilities and methods (16), insect control (16), processing (15), harvesting (4), plant protection (3), weed control (2), planting material (1)	79
2	Farm credit	Lack of ready credit; Burdensome credit terms – high interest rates, High collateral requirements, Short term of loan; Bank refusals; Lack of government support	129
3	Agricultural machinery and equipment	Lack of and inability to purchase needed equipment and machinery; Small size of available equipment for scale of farming operations; Lack of repair, servicing and maintenance centers and procedures	110
4	Lack of personal and state supported financial resources	General lack of money to perform ongoing farming operations; Unavailability of state grants or finances from other sources to supplement personal resources	50
5	Marketing of agricultural products produced on farm	Lack of reliable outlets and assistance with marketing information and advice (44); No certification of agricultural products (1); No state marketing system (1); No system of advance payment for the farmer's commodities (1)	47
6	Government and	Excessive rules and regulations;	41

	bureaucratic barriers	Cumbersome procedures; Lack of trust in government; Unnecessary interference at all levels – local and state; General lack of support by state for agriculture	
7	Land considerations	Lack of good land (11); Leasing difficulties (11); Inability to increase farm size due to financial and legal barriers (8); Cost and technology to reclaim wet land (1)	31
8	Legal issues related to farming	Inappropriate and unstable tax policy and legislation (11); Lack of legal support for farming (8); Getting title to land (6); Lack of farmland development incentives (2)	27
9	Agricultural and commodity pricing	High prices of farm inputs (12); Lack of parity of pricing among commodities (11); Unstable commodity prices (2)	25

Table 35.(Continued)

Rank by category	Problems category	Specific problems (number of mentions)	Number of mentions
10	Support for agriculture	Lack of different ways, i.e., fair price, nonrestrictive rules, etc. state government can support agriculture	23
11	Tax issues related to farming	Regressive tax structure for agriculture (10); Unstable tax policies (9)	19
12	Farm management	Lack of farm accounting systems on farms (7); Farmers not keeping appropriate farm records (3)	10
13	Agricultural information	Lack of general and specific information related to farming (8); Lack of information on operations of agribusiness companies (1)	9
14	Interpersonal relationships	Lack of trust among people (2); Unfair competition (1); Unreliable personal agreements (2); Poor business relationships (1); Lack of progressive leaders (1); Lack of protection of personal rights (1)	8
15	Farming in general	Bad farming conditions (5); Lack of crop insurance (1)	6
16	General economy	Unstable	5
17	Community and farm infrastructure	No seed processing company (1); Poor rural/farm roads (1); Lack of storage for agricultural commodities (1); Lack of livestock barns (1)	4
18	Agricultural cooperatives	Lack of organized agricultural service cooperatives	2
19	Farming experience	Lack of agronomy experience (new to	1

		farming)	

Needs of Private Farmers (Table 36). The ability to secure credit on favorable terms for farm operations was the most important need of farmers. Other pressing needs were low cost, quality inputs, adequate and reliable agricultural machinery and equipment, assistance with learning and adopting economic and production principles and practices, and securing appropriate financial, material, and human resources for farming operations. Needs less frequently mentioned were addressing land, legal, and tax issues, and providing community infrastructures.

Table 36. Perceived Needs Which If Met Would Make Vinnitsa Private Farmers Better Farmers

Rank by category	Needs category	Specific needs (no. of mentions)	Number of mentions
1	Secure credit on favorable terms	Low interest; Long term; Easy to get; Available on request; Less bureaucracy, rules and regulations; Reasonable collateral requirement	137

Table 36. (Continued)

Rank by category	Needs category	Specific needs (no. of mentions)	Number of mentions
2	Assistance with agricultural production and processing, and technology	Obtain and be able to use low cost, good quality, recommended farm inputs – fertilizers (36); fuel (23); pesticides (21); seeds (10); all inputs (8); good calves (2); herbicides (1)	91
2	Assistance with agricultural production and processing, and technology	Learn and adopt best management practices (BMPs) – general agronomic production (11); crop processing (5); plant protection (4); soil fertility, analysis, reclamation (3); cattle breeding (1); livestock processing (1)	27
3	Adequate and reliable agricultural machinery and equipment	Able to get needed equipment for farm operations; Able to get spare parts when needed; Have proper servicing, repair, and maintenance facilities; Need qualified mechanics	115
4	Help with financial and economic issues in farming in general and on farms	Understanding marketing principles and operating in reliable and stable marketing systems and markets (26); Securing state support on financial and economic problems (20); Receiving fair prices for farm products (7); Ensuring parity among agricultural commodities (6); Restarting the system of state orders (2)	61
5	Securing appropriate financial, material, and human resources for the farming	Adequate money for investment capital and operating costs (43); Increase farm size for optimum operation (10); Enhance needed material resources (4); Expand	59

	operation	farm operations on existing land (1); Secure operating grants (1)	
6	Addressing private farmland issues	Expand farm size by land acquisition and transfer of private farmers shares (17);Establish a proper system for leasing farm holdings (6); Need for sufficient land to optimize operations (3); Proper drainage of farmland (1)	27
7	Addressing legal and tax issues in farming	Have a progressive tax system of policies laws that favors agriculture (13); Need a stable legal system (4); Secure legal support and protection for the rights of farmers (4); Need to enforce laws on the books (1)	22

Table 36. (Continued)

Rank by category	Needs category	Specific needs (no. of mentions)	Number of mentions
8	Provide necessary community and farm infrastructure	Need general storage facilities (15), storage facilities for machinery and products (9), and grain storage facility (6); Need cattle barns (2); Need a boring well (1); Need new farm building (1); Need to build asphalt roads to farms (1)	23
9	Increased awareness	Need general information regarding agriculture and agricultural issues (13); Need more education (1); Farmers should exchange experiences (1)	15
10	Satisfy personal goals and have meaningful interpersonal relationships	Enjoy good health (3); Get children in the family to help with farming operations (3); Be able to trust and have good relations with others (2); A better life for all Ukrainians (2); Honest cooperation among people (1)	11
11	Engender cooperation among farmers	Organize and actively participate in agricultural cooperatives	5
12	Political and administrative efficiency	Less government interference and bureaucracy (2); Political and economic stability in the state (1); Honest government (1)	4
13	Farm management efficiency	Proper accounting system (2); Proper record-keeping system (1)	3

Summary

A personal profile of Vinnitsa private farmers describes them as middle-aged (mean=43.97 years), almost all male (95.1%), having completed two or more years of college (80%)

A farming profile of Vinnitsa private farmers shows that:

Private farmers have been farming on their own for an average of 4.7 years.

Four-fifths derive most of their income from farming. Income sources of the other one-fifth include salary/pension, teaching, accounting, and private business.

Over two-thirds belong to a farmers'/growers' association for the purpose of communicating and cooperating with other farmers, and receiving information and assistance in specific farming activities such as securing inputs and marketing their products.

Most farmers (85.6%) have a certificate of land ownership. Nearly two-fifths (38.9%0 are leasing land.

More private farmland is held under lease (8,760 hectares) than owned (6017 hectares). The average size of a lease is three times greater than the average size of owned land, 83.43 hectares compared to 26.05 hectares.

Wheat, barley, and sugarbeet are the most widely raised commercial crops and have the largest areas under cultivation – wheat 3,197 hectares, barley 2,225 hectares, and sugarbeet 1260 hectares. Other crops of some significance are buckwheat, forages, sunflower, and vegetables.

Hog production (33.7% farmers) is more prevalent than dairy-beef (29.3%) or poultry (10.2%).

Tractors, cultivators, and planters are the most used and owned items of agricultural machinery. Loaning to and borrowing from other farmers is a common practice.

More farmers buy farm inputs – fertilizers, seeds, pesticides, livestock feed, and fuel – than barter them. This may indicate movement toward a cash economy. Significantly, nearly one-fourth of private farmers produce their own seeds, livestock feed, and organic fertilizer.

Farmers have difficulty getting credit because of unfavorable credit terms – high interest and collateral, short term of loans, and refusals by banks.

Over four-fifths of farmers do not have adequate on-farm storage for inputs and farm products.

A few farmers make cereals, four, bakery products, sunflower seeds and oil, and meat and milk products.

Private retail and wholesale buyers, agricultural processing firms and agribusiness companies, and direct personal sale in the local market are the most common marketing methods for crop and livestock products.

As many as 30% of farmers feel marketing conditions and terms are poor.

Four-fifths of farmers prepare farm production plans, two-fifths marketing plans, and one-third business plans. Most make plans by themselves. Family members and raion/Center specialists help farmers who do not make their own plans.

Four-fifths of farmers are in contact with large reorganized collectives in their area for technical assistance and find the relationship to be good and mutually helpful.

Lack of optimum inputs, inappropriate production practices, lack of credit and personal finances, inadequate agricultural machinery and equipment, bureaucratic barriers, marketing difficulties, and legal, tax, and land issues are significant problems farmers face in farming.

Needs farmers have include assistance with financial and material resources, inputs and production technologies, being able to secure credit on favorable terms, and overcoming legal, tax, and land constraints to farming. If these needs are met, they can become better farmers.

Attachment B. **Dr. Michele Abbington-Cooper's Report**

Ukrainian Private Farmer Training and Outreach Center
Vinnitsa State Agrarian University

Report of Michele A. Cooper, Extension Agent
LSU Agricultural Center
On assignment to the Ukrainian Private Farmer Training and Outreach Project
April 9 - April 27, 2001

Purpose:

Assess needs in the area of youth development, continue training for faculty on Extension teaching methods and provide faculty with methods, which will enable them to better conduct community meetings.

Objectives:

1. Collaborate with VSAU/Center faculty, administration, and clientele in assessing the needs for establishing a Youth Development Program.

2. Provide training for the VSAU/Center faculty on team building.

3. Provide training for the VSAU/Center faculty on group dynamics and how to plan and facilitate community/ advisory committee meetings.

Schedule of Activities:

The assignment began upon arrival in Kiev on April 8, in Vinnitsa from April 8 – April 28, and ended in Kiev on April 30, 2001. The schedule included visits to academic and vocational schools, farms, Raion Specialists, and agriculture universities. It also included conduction of three seminars for VSAI faculty team members, interaction with several team members and the USAID Evaluation Team.

Methodology:

1. Study project documents including project proposal, annual work plan, and quarterly progress reports.

2. Correspond with Larry Brock prior to visit to determine project needs in relation to developing a youth development program.

3. Correlate my Scope of Work with those of Becky White and Dr. Robert Richard whose visits will overlap and Scopes of Work will build upon mine.

4. Using the Nominal Group Technique, meet with VSAU/Center faculty and administration to determine the needs in establishing a youth development program.

5. Interact with VSAU/Center faculty, administration and clientele through personal interviews to gain further insight into the establishment of a youth development program.

6. Document process and outcome of assessment and share results with VSAU/Center faculty and administration as well as Becky White and Dr. Robert Richard who will follow-up during their visits.

7. Present power point program on Teambuilding and coaching to VSAU/Center faculty.

8. Utilize interactive learning processes and other Extension teaching methods to reinforce team- building concepts.

9. Provide training for the VSAU/Center faculty and administration on the Nominal Group Technique and group dynamics.

Findings:

1. Youth Development and Outreach in Ukraine

Based on the results of the Open Forums (Nominal Group Seminars), school and farm visits, and personal interviews conducted during my trip to Ukraine, these are my findings/recommendations:

a. Program Focus:

The VSAU/Center faculty and administrators were very interested in a youth development program focus on the personal development of the members. The life skills in which they were most interested were:

Leadership Development
Communication Skills
Decision Making Skills
Critical Thinking Skills
Personal Responsibility
Time Management
Money Management
Citizenship
Service to Others/Community/Country

Character Education, Career Exploration, and Workforce Preparation were identified as strongly needed in a youth development program. The groups felt that the young people in Ukraine are not prepared for the world of work and have a limited view of the types of careers which might be available to them.

b. Project Focus:

Ukraine's economy and way-of-life is largely based on agriculture. Most of the VSAU/Center faculty and administrators felt that the youth development program should have a strong agricultural focus. Projects in Plant Science/Agronomy/Soil Science were suggested as well as Animal Science in Swine, Beef, Dairy, and, perhaps, Poultry.

Many girls and women find employment in the garment industry, so Textiles and Clothing and Fashion Design were suggested. Most of the vocational schools as well as the comprehensive schools also offer Culinary Arts, Food Preparation, and Yeast Bread Baking. There were many suggestions that these were good ideas for projects for girls, as they prepare girls for the role of wife and mother as well as provide training for possible gainful employment.

Computer Science received strong support from the group. Knowledge of computers allows students to be more prepared for job opportunities which may become available as Ukraine develops a stronger economy. The internet also offers students access to an entire world of knowledge not available to them otherwise.

c. Training Needs:

An introduction to positive youth development theory and developmental needs of youth in different age categories would be helpful. Most Raion Specialists do not have a background in education.

"T-3" (Train the Trainer) Training would be helpful to give the professionals a tool with which they can train others, professionals and volunteers, who will also work with youth.

There is a need for actual project training for professionals as well as volunteers.

Parliamentary procedure and meeting management for leaders/teachers working with the youth development clubs.

d. Needed Materials:

4-H Project Books in those project areas selected by the VSAU/Center faculty and administrators to serve as a "model" for the Specialists in Ukraine to use for developing their own.

Most Ukraine youth will not have money for needed project materials. A support system from interested community leaders for the club members would be very helpful.

e. Other Concerns/Suggestions Relating to a Youth Development Program:

Many of the schools are K-12, which is an ideal situation for developing leadership skills in the older youth by having them teach the younger ones.

Transportation to events will be a real problem, therefore most activities should be planned at the local schools and perhaps even during the regular school day. In the rural communities students have chores to do on the farm before and after school. These students may not be able to participate in activities held after school.

2. Teambuilding Seminar and Interactive Teaching Techniques

The teambuilding seminar was designed to introduce teambuilding concepts to the VSAU/Center faculty and administrators in the hope of encouraging a team approach to programming. Working together as a team has not been the norm in Ukraine, which was under Soviet/Communist rule until 1991.

To reinforce these concepts as well as introduce interactive teaching techniques, two activities were conducted. The first divided the group into teams of five to put a very simple puzzle together without ant oral communication among the team.

The second activity divided the group into different teams of five. Each team was provided the same materials: three toothpicks, three feet of string, three feet of clear tape, two sheets of 81/2 x 11 inch plain paper, a pipe cleaner, and a pair of scissors. The teams were instructed to fashion a man person from the pipe cleaner and, using only the other materials provided, construct a structure to protect that person from a meteorite shower, which would take place in ten minutes. The meteorite shower will be simulated by someone from another team dropping three tennis balls, one at a time, onto another team's structure. The scissors can only be used to cut materials, not as part of the structure. A leader was designated for each team and given private instructions. Two team leaders were asked to be autocratic leaders, two as laissez fair leaders, and two as interactive leaders. At the end of the activity, each team was asked to process the activity by discussing the different leadership styles used, whether they led to team satisfaction and a sense of accomplishment among the team or whether the team felt left out of decisions and dissatisfied with their participation. Each assessed the final product/structure and how it was achieved. The different leadership styles were compared and suggestions made where each might be used.

Although the activity was successful, it could have been more effective if I had had time to get to know the assigned leaders better and given them a leadership style more suitable to their own. Also, had we had more time, we could have more effectively demonstrated the leadership styles for the group.

Experiential learning requires participation of the group to be effective. Interaction is not easy for some personality types and requires an emotional stretch. This

was the first time most of these professionals had been exposed to this type of interaction and it made some of the participants uncomfortable and, according to some, like they were playing a child's game. The university faculty appeared to accept the idea most readily.

I suggest the faculty be exposed to as many different types of teaching techniques as possible so they can better choose those with which they are most comfortable or which are suitable for specific situations.

3. Nominal Group Technique

Several of the faculty members and staff at the Center had experienced using the Nominal Group Technique on a previous visit to Louisiana. In addition, it had already been used by the group to set objectives in an earlier meeting. As a result, it was very successful when we used it to identify the needs for a youth development program.

The challenge was to help the faculty understand how it could be used to conduct community meetings and advisory committee meetings. My suggestion is that the faculty should be encouraged to practice the technique several more times as a group so it becomes a comfortable exercise for them.

Ukraine Visit
Personal Journal: April 9 – 30, 2001
Michele Abington-Cooper

April 2001 - Monday

Larry Brock and Vonda (Wanda) Yamkovenko met me at the airport in Kiev and we quickly walked to the van where I met Lonia, the driver. After a brief tour of the city we began the four-hour trip to Vinnytsa. We stopped for dinner in a little roadside café similar to those in Greece and I had my first introduction to borsch (red beet and cabbage soup), potato pancakes, and a kind of crepe stuffed with cream cheese and topped with sour cream.

Arrived at the Zhovtnevy hotel in Vinnytsa about 10 p.m. And were warmly welcomed by Grigorie Loyanych (Project Coordinator), Ludmylla (translator and the office manager) and Laryssa (Project Accountant).

10 April 2001 - Tuesday

Picked up by almost the entire office staff at 8:40 A.M. and drove to the office. Met office and Project staff, settled into my desk and got internet connection. Larry, Vonda, Grigorie and I discussed plans for my visit and firmed up dates for the seminars. Yuri Vanzhula, the Animal Science Specialist, came by to finalize the plans for the Pig Chain, which Larry is sponsoring. The pigs were to be distributed on Thursday to the children and their Dads at the Swine Breeding Farm. Selections will be made through a lottery. Vonda bought red and blue ribbons to put around the pigs' necks. Sasha has been assigned to take videos.

One of the Raion Specialists, Natasha Fil, came by to meet me. We made plans to visit her Raion tomorrow and meet a few of the children to whom she is providing computer training.

Traveled to the University for an 11 o'clock meeting with Dr. Sereda to discuss my plans for the week.

Attended part of a Potato Grower's Association meeting where a representative from BAYER Chemical Company was discussing their fungicide and insecticide for potatoes (SENCOR/3eHOP0).

Returned to the office for lunch. In the afternoon, Vonda and I worked some on translating the slides for the Nominal Group Seminar tomorrow. We left the office about 6:30 p.m.

April 11, 2001 - Wednesday

After a brief meeting at the office, traveled to Lybovets to meet Zoyia Shchokina, a translator for the Project and Natasha Fil, the Raion Agent.

The students with whom Natasha has been working to teach the computer were in school, so could not meet us. After a brief visit, where we discussed what Natasha felt were the possibilities for a youth program, we traveled to the school where Zoyia taught English before coming to work for the Project.

At the school, we met with at least 50 middle school (7-9 grade) children and their teachers. The Assistant Director (Principle) was also in attendance. Although shy at first, all of the students were eager to hear about America and 4-H. After a brief presentation, which Zoyia translated, I asked some questions about what we had discussed and gave 4-H bandanas to those

who got the answers correct. Many of these students could understand and speak some English, so this was good practice for them. I left one of my cards and asked that they write to me. I will try to find them pen pals in the U.S.

After we met with the school children, we met with the Director, Mr. Michael Kapushchak, for about half an hour. He has just acquired 10 hectars of land for the school and had been working there when we arrived. He is very progressive and is interested in establishing a youth development club at his school. He and Larry also discussed asking one of the Project Agronomists, or other specialists, for help in deciding what to plant on the land.

Lunch was served at a hospital, which specializes in helping children with cerebral palsy. Our hostess was the head of the hospital, Dr. Ludmyekka Stetsuk, who is a personal friend of Natasha's.

Zoyia returned to Vinnytsa with us. Back at the office Vonda and I finished translating my slides and we went over the seminar plans.

12 April 2001 – Thursday

Made the final preparations for the seminar to use the Nominal Group Technique to determine needs for the youth development program.

A van full of us went to the Swine Breeding Farm. Yuri and five of the six farmers whose children were to get pigs met us. There was only one child present – a little boy about eight years old. Vonda had arranged for the pigs to have either a red or blue ribbon tied around its neck and they looked very festive. All the pigs were white. They call the breed Ukrainian Big Whites. The pigs were distributed via lottery.

At the office we quickly prepared for the meeting with the Raion Specialists and University Staff. Two Plant Pathologists, one from Vinnytsa and one from Kiev, came by at 1:30 to visit with Larry. They wanted to establish a working relationship with the Project as well as get the Project to pay for their Internet Service.

The afternoon Seminar was held in the conference room, which holds about 60 people. Dr. Sereda made some opening comments to the entire group in preparation for the USAID Evaluation Team's visit next week. Then the group was divided in half. One half stayed with me and the other went to a Plant Protection seminar. There were about 20 in my seminar.

We asked the group to respond to the question, " What would you like to see in a youth development program for Ukraine?" There were over 40 ideas generated, which combined to about 20. We then prioritized the ideas. These will be translated to English before I return home. Will meet with the remaining half of the group in two weeks and also conduct the Teambuilding Seminar for the entire group.

13 April 2001 – Friday

W departed early for Bershad. Stopped in a little town to buy a present for the teacher who had organized a style show at the school. Mr. V. Todosiychuk (Todo), one of the four District Supervisors who also teaches at the University traveled with us. Bershad is in his district.

The school in Bershad is a vocational school for students who want to prepare themselves to work in garment factories, culinary arts, or tractor driving and maintenance. There was no auditorium, so the students assembled in a hallway. I talked with them about 4-H in the United States and the purpose of my visit. A student who received one of the pigs was in attendance and

we asked her to come forward and get a 4-H bandana. Larry presented the youth club with a computer and gave the teacher and students who put on a style show earlier in the month awards. Then the Director of the school made a brief speech and we went upstairs to meet with the actual youth club members.

There were 45 members of the club present. They have chosen the name "Young Farm Hosts", which does not translate well in English. As best as I can determine, it means master of the farm or family or self. We worked together to help the club develop some goals for the club and the club members typed the suggestions on the computer. We also discussed responsibilities of officers for the club. A girl named Maria has been chosen as president/leader.

After meeting with the Young Farm Host Club, we visited classrooms. The fashion design classes have industrial sewing machines, which is good because that is what they will use at work. They do not have personal shears or sewing notions and flat pattern all the clothes they make. Evidently, the teachers are excellent because the garments they designed and made were very fashionable and well constructed.

In the culinary arts class there was a competition. Eight girls were in the finals of their contest and we were asked to help judge. Each student picked a theme, made several food dishes, which might be served on that occasion, decorated the table, and gave a brief talk about their project. Some dressed appropriately for their chosen theme. The themes chosen were Christmas, New Years, Easter, Spring, a Wedding, Valentines; a Child's Party, a Paris Breakfast, and Woman's Day. The foods were interesting and some were very tasty.

In addition to the food competition, there was also a display of yeast breads. I was presented Karavai – specially decorated yeast bread. When you are presented with this bread, you are expected to kiss the bread, which I did. Awards were presented to the winners.

A traditional lunch followed. The food was prepared by the students and was very good. The meal lasted until about 6:30 p.m., so we were late returning to Vinnytsa.

14 April – Saturday

The Project office was closed for the long Easter week-end, so Paul Ivanicki and I spent the time in Kiev sightseeing and learning more of the culture of Ukraine.

16 April 2001 – Monday

Returned to Vinnytsa via train on Monday night. Used the time on the train to catch up on my Journal.

17 April 2001 – Tuesday

Sasha Tsygluk, the Raion Specialist in Vinnytsa Raion, picked up Larry, Vonda, and me to visit Stadnytsia, a school in Stepanivka. Arrived at the school at about 11:30 A.M. the Director, Mr. Nicholi Byatak, met us outside and urged us to keep our coats on because the heat in the school had been turned off for the Easter Holiday and therefore the school was very cold. We visited several classrooms. All were neat and clean and some had beautiful murals painted on the walls. There were also many green plants in the windows. Noticed the lack of teaching materials – books, maps, equipment and materials to teach culinary arts, fashion design and mechanical arts. There was no refrigerator in the culinary arts lab and the stove was not working.

There were only three sewing machines and there was no machine oil for them or extra bobbin cases. The mechanical arts lab did not fare much better. This school is extremely poor.

We met with about 100 students, 16 teachers, the school director, and even the maintenance man in the auditorium. There were many questions about American schools, how they are funded, salaries for teachers, cost of living, etc. Larry and I told them about 4-H in America and the club organized in Bershad. We asked them to decide whether they wanted to organize a club in their school and let us know. The Center will help in any way possible. I gave 4-H bandanas to the students who answered the questions I asked correctly. Some of the teachers made lists of teaching materials and supplies – books, maps, etc. which Larry will try to get for them. I also have a list for the Fashion Design and Culinary Arts classes, which I plan to fill when I return to the U.S.

After the meeting with the students, we met with the teachers. There were more questions about testing, grades, ages in school, etc. Larry asked that at least three of them work with the youth development club.

As we left, the Director of the school said over and over how poor the village, school, and students are. He said the students feel there is little hope for them to better themselves. The Director only makes $25/month.

We arrived at the office about 2 P.M. and had lunch. Worked on my journal and seminar presentations in the afternoon.

18 April 2001 – Wednesday

The USAID Evaluation Team arrived at the office early. They toured the building to meet everyone and then met in the conference room. I also met Mr. V. Dmytruk, the Project Lawyer and Mr. O. Kovtun, Director of the Soil Lab.

Sasha Tsygluk picked up Zoyia and me up at 9:45 A.M. to take us back to Stepanivka to visit some farms. We stopped by the market so I could buy some flowers to give to the "ladies of the house" when we visit the farms.

The first family we visited was named Kapustyandayk. The father's given name was Yuri, his wife, Nadia, the son, Zhenia, and the daughter, Era. Mr. Kapustyandayk is a former director of one of the Collective farms and is originally from Belarus. Nadia is originally from around Georgia (the Russian one).

Era had received the best of the Pig Chain gilts and I asked to see her. Although I was not impressed with the facilities for the gilt, it is obvious that Era really loves and is taking good care of the pig. They have named her Taga', for a type of wood found in Siberia. This family raised pigs at one time but sold them all in order to make enough money to buy more land for the son. There is only one sow left, except for the new gilt.

The family has 70 hectares of land and farm with a partner, Vladimir Korbersky, who also has 70 hectares of land. Together, they raise wheat, sugar beets, grapes, potatoes, and bees for honey and also have some fruit trees. The garden takes three hectares and plans are being made to plant three hectares in grapes for wine and three more in pasture for cattle. This is a very diversified farm operation.

This family is very proud of their farm and was glad to show us around. They have a new tractor, which was made in the neighboring country of Belarus. They also had a jeep and other good equipment, which many other farmers I've seen do not.

We were invited into the home for coffee, which turned into a full meal. The home was very nice. Everyone took their shoes off as they entered.

The second farm was that of Vladimir Korbersky, the partner of the Kapustyandayks. Only the two sons were home. The farm was very similar to the first.

Vacil Nedohid was the third farmer we visited. He raises sugar beets and barley on three hectares of land, and, according to Shasha, is not a very good farmer. The farm site was very messy and the equipment was not in very good shape either. Apparently, Vacil does not take very good care of it.

The fourth farm belonged to Svidlana Boiko who farms three and a half hectares with her father and brother. She has a son and daughter, both under five years of age. The land is used to grow food for the pigs they raise to sell. There is no money for machinery, so most work in done by hand. The house was in poor condition, but they are building a new one next door.

The fifth farm was in the town of Voronovitsia and belonged to Michael Poplavski. This was actually a home visit for Sasha. Mr. Poplavski had called him the day before with a problem – someone had planted some of his land. Evidently, this is not uncommon, nor is having someone harvest your crop. Most of the farmland is outside of town and the farmers live in town, so I guess it's hard to know keep track of what is going on. Mr. Poplavski's wife is from Crimea and they have two daughters who were in school.

This family had a lot of equipment, including an old tractor on, what looked like tank tracks. They also were raising a steer to slaughter. Their home looked modern and very nice from the outside.

We returned to Vinnytsa about 4 P.M. and went to the University for the Tenth Anniversary Concert planned by Dr. Sereda. The U.S.AID Team and Dr. Velupillai attended as well. Dr. Velupillai was presented a very large loaf of Karavay with a beautifully embroidered towel.

<u>19 April 2001 – Thursday</u>

At the office, I was introduced to the USAID Team: Marcus Winters, Abdul Moustafa, and Oleksandr Muliar, the USAID contact in Kiev. I visited with them for about 15 minutes to let them know why I came to Ukraine.

At 9:40 A.M. I left with Alexander (Sasha) Nedbalyuk, a Regional or District Supervisor, for the town of Kalunivka to pick up Andre' Deminski, the Raion Specialist in Teplyk Raion, and visit a professional school. On the way we stopped to visit with the Raion Chief Administrator.

This was the largest school I have visited. The day was very chilly and misting rain, but the Director, Vladimir, met us outside. We took a walking tour of the school.

There are 550 students at the school, mostly boys. The students come from all over Vinnytsa and other parts of Ukraine. They live in dormitories for the ten-month school year and then have a two-month vacation. Because students rotate in and out, there are students all year. Students come from both middle and high schools and stay from one to three years. Those who want more specialization can stay another year. We saw new dorms being built which will hold 200 more students. The dorms we visited were dark and musty smelling. Two students stay in a room. The bathrooms were down the hall and, although they would not suit American college students, they were adequate. Other than that, it looked like a dorm – posters on the walls, loud music, pictures of family and friends.

The classrooms we visited were for teaching mechanical arts and were large and very clean. They were also cold and students and teachers wore coats. The students in this curriculum have all types of engines, tractors, etc. on which to learn. They were the types you would find all over Ukraine. There was even a machine shop where students learned to make their own tools and parts for machinery. We saw scale models of a tractor, tank, combine and truck and trailer, which were built by the students for competition and really worked.

The teachers seemed to be interested in the students and wanted them to learn. I saw them treat the students with affection. Although the boys were a little uncomfortable having strangers in their midst, they did smile and interact with us a little.

We visited classrooms devoted to teaching agriculture, mechanics, tractor driving, and auto driving. Outside there were all types of tractors and other machinery for the students to experiment on and fix. There was also a small sawmill, a huge greenhouse under construction and about 20 beehives.

The school raises cows and pigs for food and for market. These animals were in barns, which were dark and poorly ventilated, as is frequently the case in Ukraine. The doors were locked so we could not go inside. The cows are put in pastures during late spring and summer, but as far as I can tell, the pigs are always confined. Vladimir explained that the pigs are on an automatic feeding system.

In the main school building, there were classrooms for teaching accounting, book-keeping, economics and psychology. These rooms were more comfortable and warmer. After visiting the Director's office, we were served coffee and tea by the Psychology teacher.

During refreshments I learned that there is also a Culinary Arts and Fashion Design curriculum at the school. When I asked to see these classrooms, it caused some consternation with the Director. I discovered why when we saw the Fashion Design class. It was located in a two-story Georgian summer mansion built for a rich woman from St. Petersburg. Although the building is being remodeled to serve as a guesthouse for the school, work had not yet begun on this classroom. There were holes in the floors and window-panes were missing. It was dark and cold. No attempt had been made to make the classroom more comfortable or student friendly. I saw few teaching materials, sewing machines, etc. and the teacher was less than enthusiastic. The Director obviously does not concern himself with this part of the school curriculum.

Andre' took us to a fairly nice restaurant for lunch. During lunch Vladimir asked what I thought of his school. I expressed satisfaction and even admiration for everything except the Fashion Design and Culinary Arts classrooms. He assured me they were working on bringing it up to a higher standard.

After lunch we went to part of the farm associated with the school. This farm was only 350 hectares, but the school has 1000 hectares in all. The Farm Director's name is Anatole'Yacovick (Tole'). He supervises the student while they are on the farm. They grow potatoes, wheat, sugar beets, etc. and the crops are rotated. Tole' is obviously fond of the boys who learn under his care and proud of his work. The farm is very successful.

About 100 boys stay at the farm at any one time. They, too, are rotated in and out weekly throughout the year, so there are always students present. They stay in the old farmhouse, which has been converted into a dorm. Here the rooms are light and homey-a real contrast from the regular school. The bathrooms would not have passed any desirability test, but were clean. The cafeteria, however, was dark and chilly. We were tea, cookies and chocolates.

Larry had mentioned his concern over Ukraine tillage practices. He is worried that, in spite of the depth of the topsoil, the fact that they till so deeply, is costing loss of topsoil. I discussed this with Tole 'who did not seem to be overly concerned.

The farm has gently rolling hills and they have dug three ponds. The boys have a flower garden and a vegetable garden.

On the way back to the Raion Office, we passed a construction site where they were building a new monument to "The Great Patriotic War." The Raion Administrator was supervising, so we stopped to visit him for a while.

After dropping Andre' off at his office, we came back to Vinnytsa via Hitler's bunker. There is not much to see – just huge chunks of concrete with cables and pipes sticking out from them. Looks like a giant threw them around.

Sasha had visited there recently with a group from Penn State. An old man showed them around and told about the history of the bunker. It goes down seven stories and was built by prisoners of war who were then killed so they could not talk. Depending on the storyteller, there were between 12,000 and 18,000 killed. When the Allies invaded, the Germans blew top of the bunker up. Several years ago a group of scientists went down into the bunker to investigate. They evidently had a spooky experience, because the bunker was closed back up. Some people think these scientists were scared by ghosts. Others think stagnant air may have been the problem.

Sasha may be coming to LSU this fall on a scholarship to study Economic Development.

Returned to the office at 7:30 p.m.

<u>20 April 2001 – Friday</u>

Started early today. The van picked us up at 7:30 A.M. for the office. Left in caravan with USAID Team at 8 A.M. for Bershad. Stopped to visit with and interview a Raion Administrator in Nemyreiv Raion on the way. The meeting was in the Administration Building where the Raion Specialist has his office. The building and office were extremely nice, but the "facilities" were still "out back." The Raion Specialist's office was very colorful. There were paintings on the walls depicting maps of the oblast and the logo of our project. Coffee, tea, and cookies were served.

I was impressed with the business-like manner in which the Raion Administrator conducted the meeting. It was clear that he and the Raion Specialist had a good working relationship. The Administrator made some very positive comments about the Project and how much the farmers and HPO's (Home Plot Owners) in his Raion have benefited from it. The head of the Farmer's Association, a volunteer, and a farmer were also at the meeting. It was interesting watching the interaction among the different groups represented.

We went to lunch at The Rooster Restaurant in Tulchin. The restaurant was owned by a poultry farm, so we ate lots of chicken. We picked up the head of the local Veterinary College to go to lunch with us.

As we continued our trip to Bershad, I learned the difference between Collective Farms and State Farms. Collective Farms were built around a village and most of the people in the village worked there in some capacity. I guess this was similar to the "company towns" built around mining and lumber camps in the U.S., except these were not privately owned. State Farms were owned by the state with a manager appointed by the Governor. They were used for breeding and raising animals, which were then sold to the Collectives. I'm still not sure about the difference between Collectives and Cooperatives.

At the school, we met the Youth Club in the hall again. They were excited to received their new T-shirts Sasha had designed with the Young Farm Hosts logo. As a surprise, the club put on a Fashion Show for us. I saw, once again, how much these students can do with practically nothing. Several of the garments were very fashionable and well made. Fit did seem to be a problem for some. Also, the quality of available fabrics was less than desirable.

After the Fashion Show, the USAID Team went to interview some farmers and we went upstairs to meet with the club. I conducted an experiential leadership development activity with them while Paul translated. There is no word for "leadership" in Ukrainian, so concepts need to be demonstrated, rather than just defined.

I believe the students really enjoyed the experience. Loyanych participated and Dr. Velupillai and Sasha took pictures.

After leaving the school, we visited a poultry farm where dinner was planned. Dr. Velupillai visited with the Public Relations Representative. She was extremely knowledgeable. This farm raises hens and broilers and produces more than 100 different food products ranging from eggs to sausages to wieners to verenyke to whatever. Their biggest challenge seems to be the availability of baby chicks. Dr. Velupillai will be working with this plant as part of a new program called PFID.

During dinner, the Raion Administrator was the host and seemed to be both very nice and quite capable. He, too, was complimentary of the Project.

It was almost midnight by the time we returned to Vinnytsa.

21 April 2001 – Saturday

I was picked up at 10 A.M. for the office. We met together with the USAID Team for de-briefing. We discussed their evaluations and possible recommendations for expanding the project into the two neighboring oblasts to the east and west of Vinnytsa Oblast. The discussion was extremely interesting and I learned a lot about the Project during the discussion. I made several suggestions when we discussed the youth program. The USAID Team was concerned about stretching the Raion Specialists so far by asking them to also do youth work. I suggested a system similar to the one we are initiating in Louisiana with Youth Specialists throughout the state.

Lunch was supposed to be hosted by the Lt. Governor at a local restaurant, but he could not attend. Dr. Sereda served as host instead. We had lunch and the traditional toasts and the USAID Team left for Kiev via Hitler's Bunker. Dr. Velupillai and I visited about the Project for about an hour and then I called it a day.

22 April 2001 – Sunday

Larry, Vonda, Paul, Dr.Velupillai and I met for breakfast at 9:30 A.M. and then went to Dr. Velupillai's room to talk about plans for the Project. At 11:15, Dr. Velupillai was picked up to go to Muldova.

Larry, Vonda and I went to the market after the meeting and then spent a quiet Sunday afternoon resting.

23 April 2001 – Monday

This was a quiet office day. I caught up on my journal and made final preparations for the Teamwork Seminar on Thursday.

24 April 2001 – Tuesday

Traveled with Larry, Vonda, Sasha Tsygaluk, and Tole' to Kryzhopil Raion to visit another school. Arrived at the school at 11:45 a.m. This school is a comprehensive school, although some vocational training is available. The atmosphere in the school is very different from the other schools we have visited. It is physically and aesthetically warm with beautiful murals and green plants everywhere. There is plenty of natural light. A pretty park surrounds the school and the school owns 15 hectares of land used for both research plots for science classes and growing crops to support the school. There are 760 students in this K-12 school.

The Biology teachers work with students beginning in the second grade in developing research ideas for experiments on the land. As the students pass to higher grades, the experiments become more difficult. All the work for the research and taking care of the crops is done by students. Beginning in the sixth grade, the students become seriously involved in taking care of the crops. The school hires a tractor, but has plows, harrows, and seeders as well as two trucks. There is also a car for teaching tractor driving to the boys. Profits from some of the crops are used to provide lunch for students who cannot afford to pay for it. Crops are rotated from year to year. The Raion Specialist has helped them secure seeds, fertilizer, and herbicides.

Girls can earn a certificate in Fashion Design. Their lab was clean and bright with good sewing machines. The teacher expressed a desire for a serger to enhance her ability to teach needed skills.

The only money this school receives from the national budget is for teacher's salaries. They raise all the money to re-furbish the school, pay utilities, and buy supplies.

The students and faculty in this school are more relaxed and friendly than in the other school we have visited. There is emphasis in creative arts as well as academics and several of the dance teams have competed in dance exhibitions. The girls design and sew their own costumes.

Returned to the office about 7:30 p.m.

25 April 2001 – Wednesday

Conducted Nominal Group Technique for the remaining Raion Specialists and faculty at 11 a.m. This seminar was more relaxed and participation was good. Forty-eight ideas were generated and condensed down to thirteen. Conducted the Teamwork Seminar for all the faculty and Raion Specialists at 2 p.m. We used several experiential learning techniques in this seminar. This teaching technique is new to the faculty which is much more familiar with and comfortable with lecture.

The activities were interesting to watch and the participants seemed to enjoy a less structured atmosphere.

26 April 2001 – Thursday

Today we traveled to Kamyanets-Podilsky to meet with the rector of the Agricultural Academy. If the Project expands, it will include this Oblast. This Academy is very different from the Vinnytsa State Agrarian University – much more aesthetically pleasing and natural light.

After spending some time in the discussion of future plans we toured the school and had tea with the rector and our guide, Oksana.

After a tour of the town, we returned to Vinnytsa at 8:30 p.m.

27 April 2001 – Friday

Caught up on paperwork and had my de-briefing today. Hosted a dinner for the staff that night There were twelve of us at dinner and we had a wonderful time.

28 April 2001 – Saturday

Traveled to Kiev with Paul. Had a nice dinner with Dr. Velupillai.

29 April 2001 – Sunday

Paul took me to the airport for a flight to Zurich at 1 p.m.

30 April 2001 – Monday

Returned to Baton Rouge.

Needs Identified and Number of Votes Received at Nominal Group Technique Meetings as Translated By Vonda Yamkovenko

NumberDescription

Meeting Number 1

No	Votes:
9.1	Planning
9.2	Fulfillment

3 Votes:

14	To work with children's mothers (explaining and coordinating their activities)
7	Evaluation of results
19	Working with families which have many children
20	To work in a form of games
1	To organize clubs (like 4-H) on farm basis

4 Votes:

10.1	To organize summer schools for farmers' children (on the basis of farms)
10.2	To strive for creation of working conditions and healthy rational rest for young people
10.3	To organize excursions
5	Young people must be involved into work on land
12	To investigate youth problems of nowadays
21	To participate in home economics implementation
16	To provide them with necessary literature

5 Votes:

6	To teach children to operate a computer
15	To define youth leaders
16	To develop practical skills

6 Votes:

1	To help children to find their place in life through different programs
1	While organizing training courses for children take into account their skills and bents
1.1	To develop educational and training programs for children
1.2	To teach children to be friendly and united
1.3	To renew the work of youth clubs (sport, music, arts, etc.)
1.4	To organize groups of interests
1.5	To organize youth clubs: Young Farmers, Friends of Nature

7 Votes:

11	To distribute time correctly

11 Votes:

8	To give young people opportunity to realize their talents
8.1	To teach young people to work and to invest money
8.2	Teach to manage and to influence the circumstances
8.3	Let them be more independent

12 Votes:

2	To provide their versatile development
2.1	To teach them elementary agronomy and livestock production sciences
2.2	To obtain specialty
2.3	To choose a profession
2.4	To treat them with liking and understanding and to help with professional orientation
13	Youth must be under supervision

13 Votes:

3	To teach them how to earn money and to help (lead) them in life
3.1	To teach children how to operate a private farm and to take care of farm animals

17 Votes:

5.1	To draw young people into work
5.2	To teach them how to work on land
5.3	To bring up children in the spirit of readiness to work through organizing different programs and clubs, etc.
5.4	To make them love farming

18 Votes:

1	To organize youth clubs

Meeting Number 2

No Votes:

5	A man must be a master on his land
5.1	To teach them to operate a private farm
5.2	To develop educational programs which would help people to form a Private owner world outlook

3 Votes:

100

10	Organization of a "Young Farmer" Club
8	To teach young people to take care of animals
9	To develop a special training program on livestock production (teaching how to look after animals)
9.1	To communicate with them and to demonstrate different materials, films and publications about youth organizations
9.2	To develop their interests
9.3	To make them interested in something they would deal with in future
9.4	To use the most interesting participants' ideas and proposals in a work plan

3 Votes:

12	Home economics
12.1	To organize a "Young Mistress" Club for girls
12.2	Home book-keeping
9.1	To fill in their free time
9.2	To solve problems in a group (family, company)
9.3	To organize an aerobic exercise group
9.4	Spending free time: taking care of household plots and livestock, organization of cossak units
9.5	Teaching ethics and aesthetics to children
4	Meetings with the most experienced farmers

10 Votes:

11	To make young people acquainted with youth clubs activity in other countries.
11.2	To organize a "Pen Friend Club" at Raion offices to write letters to their friends from Louisiana

13 Votes:

2.1	Management and leader skills development
2.2	To select the most perspective and willing young people who want to be engaged in farming
2.2.1	To conduct the activity which would help young people to mold themselves as personalities. To teach them to make decisions and to develop their sense of responsibility.

14 Votes:

3.1	To teach them to design the farm sites
3.2	To teach them to design and to make a nice appearance of both their farm plot and the Village they live in.

19 Votes:

7.1	To teach them how to operate a computer
7.2	To organize a training course in computer operation
7.3	To teach them how to search for the information in the Internet system and how to provide the information on their own.

31 Votes:

14.1	To teach them to be patriots and to take care of nature (environmental protection)
14.2	To show how important knowledge is for them as well as for the whole country.
14.3	To study culture and national traditions of Ukraine and other countries.
4.1	To provide them with basic knowledge of agricultural sciences
4.2	Youth corporation with science and production
4.3	Cooperation of science with education and production: organizing at schools agricultural scientific clubs
4.4	Together with the University faculty, farmers and Agricultural board representatives to organize livestock production and agronomy clubs, etc.
4.5	To teach them to farm efficiently
4.6	To explain the meaning of a "To be an owner" perspective
4.7	To show them the advantage of efficient farming

22 Votes:

1	To involve them in work on land
1.1	To make them love land
38	To organize a demonstration plot, involving young people into its development
12	To organize demo plots at village schools, where children would be able to implement their ideas into practice.
27	To develop practical skills by working on land and taking care of farm animals under a specialist's supervision
42	To engage young people into practical work in the field (operating agricultural machinery)
15	To develop practical skills to earn money, working with land

Attachment C. Success stories

Mohyliv-Podilsky raion office (S. Kryzhanivsky)

Farmers of "Lidia" private farm grew cucumbers on a 2.5 ha land plot. They suffered a real problem with weeds. They managed to hoe the weeds only once and then it started to rain. It rained and the weeds grew intensively. As it was impossible to hoe weeds again, the situation became critical. The farmer addressed the office with a request for help. He received a suggestion to apply herbicides on a 2ha-land plot. The remaining 0.5 ha had been hoed for several more times. As a result, the treated area produced a nice crop, much better than the other one. Moreover, weeds on the other plot continued to grow.
Thus , the experience obtained appeared to be good in both financial and scientific issues.

Bar raion office (V. Segeda)

The idea to organize a "Young Farm Host" club in Yaltushky secondary school appealed to me. Though the school administration agreed, they were not sure that a new organization would draw children's attention and interest. Besides, another problem arose: the absence of working tools. We had several visits with teachers responsible for youth development and those, who lead school plots activity. We determined their priority needs and addressed the Center with a request for help. The Center provided the school with hoes, shovels and buckets.
As a result, we organized a group of children, who like agricultural production. All the children are in the 7th grade. They believe in this project as they witnessed real help from the Center. They are sure now that they will benefit from their participation in the club activity. Moreover, they expressed a wish to raise rabbits and quails and to grow different crops on their school plots.

Koziatyn raion (N. Kredentser)

In June, 2001 Oleg Kravchuk, a local private farmer came to the raion agency with a problem typical for almost every farmer in Ukraine – lack of finances for purchasing machinery (particularly a sprayer). Occasionally the head of raion farmers' association was present in the office at that time. My suggestion to a farmer was to become a member of the "Vinnytsia Farmers" Credit Union. But this suggestion was declined because of the credit union inability to provide a farmer with such sum. Then the head of raion association offered his help. It turned out that he was a president of Farmers' Support Fund in Vinnytsia and in August –September the Fund would provide the farmers with interest-free credits. So, the farmer could use this opportunity. Mr. Kravchuk was very happy. His dream would come true and he would buy a sprayer.

Kryzhopil raion (V. Fedoryshyn)

In autumn, 2001 the raion office was visited by two young farmers. They were starting farming at that time. Their names were Yakiv Chychak and Mykhailo Chervasiy. They had 50 ha of land and they wanted to grow winter wheat.
I examined their field and determined the level of soil preparedness for sowing as well as the amount of weeds and possible yield. I recommended the variety of wheat that comes best for our climatic conditions. They had to use cross-wide method of sowing. It means that a planter sows 2.2-2.4 centners/ha following the main way, and when it comes across, it plants 0.8-1 centner/ha additionally. Thus, the crops get thicker and the amount of weeds decreases. The amount of productive stalks per 1square meter increases to 600-620.
As a result, the farmers received the yield of 57 centners/ha.

Chernivtsi raion (S. Nedozymovany)

At the beginning of August a farmer A. Makogonchuk shared his problem with me. It was high time to harvest, the weather was perfect for it but the farmer had no combine-harvester. He contacted many different companies but the answer was the same: "There is no combine available. Wait". He felt desperate.

We went to the office and called every company providing agricultural machinery. Our search appeared to be successful. We found an available combine harvester in Agricultural Technical-Professional school. So, we went to the School Principle and conducted an agreement to rent a combine.
As a result, the farmer was happy to harvest his yield and I felt well because I managed to help him.

Gaisyn raion (O. Nikolaenko)

I provided a "Krola" private farm with recommendation to use a special technology of feeding winter wheat with carbamide. As a result, the received yield reached 42centners/ha. The financial effect constituted almost 6.000 gryvnas.

Chechelnyk raion (I. Kryvitska)

A farmer G. Demchenko visited the raion office with his trouble. With the adoption of the Land Code he would not be able to invest necessary resources into his land because there would not be a guarantee for his right to rent his land for a definite period. We addressed the lawyer of the Center and he provided the farmer with some advice. The lawyer also answered the following questions: how can farmer's relatives become members of the farm? Do they receive salary? How to sign a contract between the head and members of the farm? Can the members work without being paid if they signed the corresponding contract? The farmer thanked the Center for qualified assistance and for the development of necessary documents. He saved time and felt himself a master of his land.

Vinnytsia raion (O. Tsygluk)

Farmer A. Kapustianchyk who lives in the village of Stepanivka wanted to produce pigs. But the problem was to obtain really good piglets. The family used to feed 10-15 pigs and stated that it was a substantial financial help for the family. Pure pigs' quality caused their loss almost by half. But the family still was eager to grow pigs.
Under of the youth development program the Center developed a "pig chain" project. Following the project, one 60 kg sow of a 'Big White" breed was given to Vinnytsia raion. The farmer's family felt very happy about the opportunity to participate in the project and their daughter Iryna took the responsibilities of feeding the pig.
The pig weight for now is 110 kg . The family decided to produce this breed in future and to increase the number of pigs to 20.
Now we are receiving requests from other farmers who want to get this breed as well.

Bershad raion (A. Andreytsov)

The problem of providing farmers with financial support is extremely real today. That's why it was an ordinary thing when in early spring two young farmers came to the raion office with a request to help them to receive credit for sowing grain. I told them about our Credit Union and they made a decision to join it immediately. I acted as a guarantor for these farmers and they were able to get a desirable credit. The size of the credit was 3,500 grv per each.

Trostianets raion

Grygoriy Kuybida wished to become a private farmer. But he faced difficulties in obtaining a land plot. He came to the raion office and asked for help. He received consultations on the procedure of obtaining land, and learned what papers he needed to be registered to become a private farmer. Besides, I, as a raion specialist, arranged a meeting with those officials, who were involved in this process. The question is still not settled, but its solution is moving in the positive direction. We have no doubt that the man will get his land and become a farmer.

Tyvriv raion (I. Krotyuk)

This story happened on "Kolos" farm (a farmer Volodymyr Mandzyuk) on August, 8, 2001. Trucks were carrying grains from the field for cleaning in a grain-cleaning machine. But suddenly this grain-cleaning machine broke down. Everybody felt a kind of despair as a main engine collapsed. It meant no grain cleaning at such a tense time.

Volodymyr at once left for searching a new engine and I, together with Anatoliy Gulyk (the other farmer), began to examine machine in searching the reason of breaking. I paid attention to the block of operation and defence, though the representatives of local agricultural cooperative expressed scepticism about my suspicion. The discussion was still going on, when the farmer returned with a new engine. He insisted on its immediate installation. I couldn't agree with him and kept on looking for a reason when finally found it out. My suspicions turned out to be right. We had to change only some of the parts and to install them correctly. The guys were surprised but happy. That was a lesson for them showing that only sustaining a fact decisions lead to the correct solution..

The farmers thanked me for my coming and help. Volodymyr Mandzyuk stated that farmers benefit from having a good raion specialist who provides assistance to them.

This is only one story from many that happen in farmer's life.

Zhmerynka raion (M. Kuzmenko)

After receiving information about the efficiency of "Kleps" growth stimulator a farmer S. Melnyk decided to apply it on barley and buckwheat grain seeds. He watched his crops during the period of vegetation and harvesting. It felt good to see thick and rich crops. We organised a demonstration on that farm. The demonstration was visited by many farmers. They liked the results and decided to use the stimulator for application on their own grain seeds.

So, the farmers received evidence in that low expenses could bring significant gain.

Nemyriv raion (P. Gudyma)

While visiting a farm of A. Portianko I learned that a session of the Village Council was going to approve a decision about taking away his 19 ha of rented land, as the term of contract would come over. That was a part of reserved lands, a property of a Village Council and fixed specially for private farming.

As the farmer had been using his land properly and it was a reserved land, we recommended him to give an application to the session, asking to increase his farm. We also addressed the Center's lawyer who provided the farmer with consultations.

So, the farmer gave his application form to the Village Council session. Then, he and raion specialist had an appointment with the Head of Village Council. The application had been registered. The farmer also applied for a court to appeal against the decision of the session.

Shargorod Raion (M. Pakholchak)

A land plot owner came to the raion office in searching for an advice. The problem concerned sugar beets, which he grew on his land. The plants were turning yellow and getting dry. We went to the field and determined the disease. After finding out the appropriate fungicide, we bought it at the lowest price and applied it at the same day.

I visited that field 5 or 6 days later and was glad to see the effect: 70% of all crops showed improvement.

Orativ raion (V. Poshtar)

"Agrorostok" farm, which belongs to Mykola Motuziak, is one of the most successful both in raion and oblast. But previously pig production business suffered difficulties. The Center initiated a demonstration on feeding sucking pigs and piglets from 2 to 6 months of age with premixes and combined feed produced by "Kyiv- Atlantic". The company supplied the farm with 7t of feed free of charge.

After 7 months of the demonstration, the process of pig production had been significantly improved. Weight gain of suckling and feeder pigs increased. Thus, the average daily weight gain of feeding pigs constituted 700-800g in June-July.
So, the farmer was convinced in the expedience of using balanced mix feed for pig production and its advantages in comparison with home-made feed.

Lityn raion (V. Gusak)

In June I received a request from a farmer to help him with marketing early variety of cabbage. In a local market the price for it was 40 copeks per kg but the process went on slowly. The farmer was able to sell only 200kg of cabbage a day. He needed to sell it as quickly as possible, as cabbage heads grew fast and the price for big heads reduced to a small sum.
I suggested him to take part in the exhibition "Podillia Potato and Vegetables, 2001" and to present his products there. At the exhibition the farmer sold 2.5t of cabbage. He was very glad of the results.

Tulchyn raion (Y. Zubchenko)

Once a farmer from Yurkivka village came to our office with a new idea of amaranth's production. This crop is considered to have valuable biological properties. But, as there is no facility in the oblast for it's processing, there are very few people in Vinnytsia who grow it. The farmer Volodymyr Melnyk expressed a desire to unite the amaranth producers into association in order to promote this product at the market.
I helped him to develop the By Law and other necessary documents. Then the farmer took these papers to the Institute of Agricultural Feed. The process is on its final stage now and confirmation of Amarant-Podillia association is expected soon.
Then the farmer took a credit from "Vinnytsia Farmers " Credit Union, which allowed him to order amaranth processing equipment.
So, he will be able to market not only amaranth seeds but also flower and oil.

Illintsi raion (I. Kachula)

Farmers of Illintsi raion face difficulties with harvesting machinery. That is why it was a common thing when a farmer Taisia Polizhaeva asked for help in searching a combine harvester on beneficial terms. She had asked other organizations for help but they provided it at 18% service interest.
I asked a director of a local agricultural machinery company for help and he agreed to do it. He did it because the raion office often provided assistance to this company. Payment for the work was very advantageous for the farmer.

Pogrebyshche raion (V. Polishchuk)

There are farmers and private agricultural producers who have their own land and want to improve the situation, but do not know how to do it.
A farmer Sergiy Volynsky, a lawyer by education, asked me to provide him with regular consultations on the industrial technology of winter wheat production. Since then we regularly met on his field. We discussed in details the production technology and read special literature.
As a result, the farmer received a high yield of winter wheat of the third class. The farmer was satisfied with the results of our work and wanted to go on in collaboration with raion office.

The head of "Podillia Potato and Vegetables" Association, Ludmyla Brendak

Morning starts with awakening. Every person spends his or her day in his/her own way, but all planning is done in the morning. The same is with business.
It is not good for a person to be alone with his thoughts and decisions, especially if the family's well being depends on them.

I would call the Center an "Immediate Help Service". Because whenever there is a need for a legal advice or for any consultation from a specialist, we call, write or go to the Center for it.

Due to the assistance provided by the Center, the association "Podillia Potato and Vegetables" was able to organize more efficiently and to held 4 scientific-practical conferences, 3 exhibitions and to visit a demonstration field in Kyiv oblast, where they grow 20 highly productive varieties of potato.

Besides, the Center provides us with an opportunity to set contacts with foreign partners. This is a substantial support for our association, and it gives us confidence in that we together do a right thing.

Attachment D.

Initial Educational Program for the Future Specialists of the Extension System "Extension Theory and Practice" on the basis of the experience of Vinnytsia Center for Private Farmer Training and Outreach

Location – Vinnytsia, VSAU, Center's offices
Duration – 5 days (40 academic hours)

#	Topic of the class	Teacher	Hours
	Day 1		
1.	The history of extension in the US, Ukraine, other countries of the world. The purpose and goals of extension.	T. Mulyk	2 hours
2.	Agriculture and higher agricultural education in the US	N. Pravdiuk	2 hour
3.	Responsibilities and authorities of extension consultants and raion specialists	L. Brock	2 hours
4.	Methods of extension activities and education to be used by the raion specialists	P. Sauliak	2 hours
	Day 2		
1.	Advisory committees and their work	L. Brock	2 hours
2.	Theory of changes	P. Sauliak	2 hours
3.	Ties between science and production. Planning demonstrations and conducting field days	V. Petrychenko V. Mazur	2 hours
4.	System of formal and informal education. Planning of educational programs by raion specialists	N. Fishchuk	2 hours
	Day 3		
1.	Organization and operation of farm cooperatives	S. Kaflevska	2 hours
2.	Evaluation of the educational impact of the project on private farmers (Dr. Verma's report)	G. Loyanych	2 hours
3.	Development of educational programs (assignments for the participants)	N. Fishchuk	2 hours
4.	Youth development programs – the experience of 4h clubs	V. Yamkovenko	2 hours
	Day 4		
1.	Situational analysis	T. Butkaluk	2 hours
2.	Visit to Kalynivka raion office, studying the activities of the raion specialist. Visit to the private farm	T. Butkaluk A. Dyminsky	2 hours
	Day 5		
1.	Work with volunteers	Y. Vanzhula	2 hours
2.	Organization and operation of the farmers' credit union	O. Kryvokon	2 hours
3.	Psychological aspects of the work with farmers	G. Loyanych	2 hours
4.	Round table conference	All faculty and participants	2 hours

Attachment 3.
Programme 15th ESEE 2001, August 27 - 31

DAY	TIME	TOPIC	TOPIC	TOPIC
Monday Morning August 27	9.30 – 10.30	**Speakers**		
	11.00 – 12.30	**Speakers**		
Monday Afternoon *August 27*	13.30 – 15.00	Rethinking Extension 1	Social Learning 1	Educ. & Training 1
	15.30 – 17.00	**Rethinking Extension 2**	Social Learning 2	Educ. & Training 2
Tuesday Morning August 28	9.00 – 10.30	Countries in Transition	Farmers' Participation	ICT
	11.00 – 12.30	*Debate: Integral design*	*Debate: Decision making & uncertain future*	*Debate: Methodologies*
Tuesday Afternoon August 28	14.00 – 17.00	**Field Visit**		
Wednesday Morning August 29	9.00 - 10.30	**Niels Roling**		
	11.00 – 12.30	**Plenary debate "Open Slot"**		
Wednesday Afternoon August 29	13.30 – 15.00	Privatization	Facilitation of / Convertion to Org. F.	Survival Strategies 1
	15.30 – 17.00	How to organise an extension service	Organic Farming	Survival strategies 2
Thursday Morning August 30	9.00 – 10.30	*Debate: Perspectives agricultural extension*	*Debate: Negociating Sustainability*	*Debate Multiple farming*
	11.00 – 12.30	**Keynote speaker**		
Thursday Afternoon August 30	14.00 – 17.00	**Fieldtrip to "Gelderse Vallei"**		
Friday Morning August 31	9.00 – 12.00	**Synthesis**		
	12.00 – 12.30	**Choice of next venue 2005**		
	12.30 – 13.30	**Closing Lunch**		

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