

**Russian Agricultural Students' Perceptions of Local Foods and Sustainable Agriculture:
Implications for Training the Next Generation of Russian Agricultural Leaders**

Jessica M. Bagdonis

Ph.D. Candidate

The Pennsylvania State University
Department of Agricultural and Extension Education
University Park, PA 16802
E-mail: jmb769@psu.edu

Thomas H. Bruening, Ph.D.

Associate Professor

The Pennsylvania State University
Dept. of Agricultural and Extension Education

Abstract

Low agricultural output, coupled with environmental growing restraints due to unfavorable soil, climatic and weather conditions in many agricultural zones throughout Russia and increasing consumer preferences for Western-style food products, have given rise to increasing concern about land use and the future of agricultural development in Russia. This paper examines Russian agricultural students' perceptions regarding sustainable agriculture and attitudes towards local foods to identify implications for teaching the next generation of Russian agricultural leaders. Researchers utilized a descriptive research design. The data were collected via a survey questionnaire administered to 60 undergraduate students at the Moscow State Agroengineering University (MSAU). Results suggest that there are contradictions in students' perceptions of sustainable agriculture and attitudes towards local foods.

Key words: Russian agriculture, international agriculture, agricultural education, sustainable agriculture, local foods

Introduction

Since its debilitating economic crisis in 1998, Russia's economy has recovered significantly. Despite this recovery, however, total agricultural output has declined by 40 percent (Liefert, 2001). This decrease, coupled with environmental growing restraints due to unfavorable soil, climatic, and weather conditions in many agricultural zones throughout Russia (Zuchenko, 2005), and increasing consumer preferences for Western-style food products (Caldwell, 2002), have given rise to increasing concern about land use and the future of agricultural development in Russia. To ensure sustainable development of agriculture in Russia, it will be important to prepare Russian students of agriculture - the nation's future agricultural leaders - to balance sustainably issues of agricultural production, land use, and changing consumer food preferences in Russia. Accordingly, in this section, we will provide a brief overview of the status of agricultural production, land use, and changing consumer food preferences in Russia.

Sustainable Agriculture in Russia

In a report on promoting sustainable agriculture in Russia published by the Russian Academy on Agricultural Sciences, Zhuchenko (2005, Summary section para.1) asserts that "Russia's agricultural industrial complex has generally not been effective and should be combined with full and, mainly, differentiated use of natural, biological, material, and social/economic resources." He suggests that Russia's agricultural crisis is the result of the centralized planning of agriculture with disregard to local contexts. Specifically, such planning has resulted in a leveling approach to land management, an increased reliance on chemical use (pesticides, herbicides, fungicides), and an unequal distribution of resources among high-risk agricultural zones and zones of stable agricultural development (too much investment in the former and too little investment in the latter). Zhuchenko suggests that sustainable agricultural development practices that take into account local agro-ecosystems can help improve agricultural production in Russia. He emphasizes that success on each farm "depends on the ability and the right of a farmer to make decisions everyday depending on local natural conditions (soil, climate, weather)" (Section 6, para. 1). Therefore, an important prerequisite for successful reform of Russian agriculture is educating farmers about appropriate sustainable agricultural practices for their environment. Such arguments suggest the need to examine if Russia's future agricultural leaders are prepared to promote sustainable agricultural development in Russia.

Land Use in Russia:

Rural Depopulation and the Abandonment of Farmland

While the problem of rural depopulation in rural Russia has been noted by demographers (see, for example, Feshbach, 2003; Heleniak, 2002), Ioffe, Nefedova and Zaslavsky (2004) have linked concerns about rural depopulation with concerns about the abandonment of farmland. Because the migration drain on rural populations "has been aggravated by the self-selection of movers versus stayers" through which the "most industrious, bright, dexterous, savvy, and least given to heavy drinking tended to leave for the city, while the most passive and resigned tended to stay [in the rural towns]" (Ioffe, Nefedova, & Zaslavsky, p. 932), While such depopulation could be disadvantageous for a community, Ioffe, Nefedova and Zaslavsky suggest that the spatial contraction of farmland that naturally follows rural depopulation could be advantageous for overall agricultural productivity. It is likely that the least productive land that required the

most inputs will be abandoned, thereby leaving land that likely will be a “better match to the people’s actual ability to cultivate it” (p. 938).

Russia may also be facing a modern agricultural demographic crisis. This potential crisis necessitates an examination of Russian agricultural students’ perceptions regarding the sustainable development of agriculture.

Changing Food Preferences in Russia

Recent concerns about the health, social and environmental consequences of a globalized food system have increased some consumers’ desires to purchase domestically produced foods over imported foods. Consequently, there has also been a considerable amount of research devoted to examining country of origin (COO) effects on buyers’ evaluation of food products (Verlegh & Steenkamp, 1999). Among others, such effects can be a manifestation of consumer ethnocentrism or concerns about food safety.

Drawing on social identity theory ethnocentrism is a sociological construct that refers to the bias of believing in the superiority of one’s own group and the inferiority of other groups. Ethnocentric consumers often hold beliefs that purchasing imported products hurts the domestic economy (Orth & Firbasova, 2003). Research conducted by Huddleston, Good and Stoel (2000) suggests that while Russian consumers perceive differences in product quality based on country of origin and product necessity, consumer ethnocentrism does not have an overall perceived effect on product quality.

Discussions about increasing risks associated with the global food system have been prevalent during the recent decades. Such risks that have been discussed among the media and other public outlets include pesticide residuals in fruits and vegetables, the high availability of heavily processed foods, genetically modified organisms (GMOs), and foodborne illnesses. Research by Berg et al. (2005) suggests that among the countries of Russia, Denmark and Norway, Russian consumers express the lowest level of trust in food safety. This conclusion was drawn only from a sample of 37 Russian consumers. Thus the generalizability of their findings is rather limited.

In a review of food, nutrition and health in Russia, Robertson (1998) highlights several areas of concern that are noteworthy for this paper discussion. First, he expresses concern that countries who wish to participate in global food trade will need to balance protecting their national food products without interfering with free trade. Agricultural subsidies in the west make Russia vulnerable; so long term policies will need to promote sustainable local production. Another area of concern is the dominant role of advertising and media in promoting candy, snack items, and fast foods. In Russia, 19 percent of the population believes that advertised brands are better than brands that are not advertised. Robertson suggests that initiatives such as “local production for local consumption” could help increase fresh fruit and vegetable intake, thereby countering ad for junk foods and improving nutrition while supporting local agriculture. Such concerns call for inquiry about Russian agricultural students’ attitudes about local foods.

Purpose and Objectives

The purpose of this study was to conduct an exploratory analysis of Russian agricultural students’ perceptions of sustainable agriculture and attitudes towards local foods to identify implications for teaching the next generation of Russian agricultural leaders. Specifically, the objectives of this study were to:

1. Identify Russian agricultural students' perceptions of sustainable agriculture and determine whether Russian agricultural students' perceptions of sustainable agriculture vary by gender or type of academic discipline.
2. Identify Russian agricultural students' attitudes towards local foods and determine whether Russian agricultural students' attitudes towards local foods vary by gender or type of academic discipline.

Methods

Researchers utilized a descriptive research design. Data were collected via a survey questionnaire designed by the researchers. Development of survey questions was informed by prior studies on perceptions of local foods (Wilkins, Bowdish, & Sobal, 2002; Harmon & Maretzki, 2006) and by prior studies on perceptions of sustainable agriculture (Jayaratne, Martin, & DeWitt, 2007). The survey instrument was composed of three sections. Section one included statements describing issues and practices associated with sustainable agriculture. Students were asked to indicate the extent to which they agreed with each statement by using a four-point Likert-type scale with response options ranging from (1) strongly disagree to (4) strongly agree. Students were also able to respond with the answer choice "don't know." Section one also included an open-ended question for which students were asked to provide their definition of sustainable agriculture. In section two, students were asked to indicate the extent to which they agreed with statements about local foods using the same Likert-type scale as in section one. They were also asked to indicate whether they prefer to shop at a *rinok* (local market) or a supermarket. Demographic information, such as gender, age, college major, home city, and parents' occupations, was collected in section three. Agricultural and extension education faculty reviewed the survey instrument for content and face validity. The Social Science Institutional Review Board at The Pennsylvania State University approved this study. In Russia, the Director of International Programs at Moscow State Agroengineering University provided approval for this study, as well as access to research subjects.

The survey was administered by faculty in the Department of Foreign Languages at Moscow Agroengineering University to students in English language courses. Sixty-four students completed and returned the survey. In an effort to acknowledge limitations of this research that might arise from issues associated with translation, such as administering the English survey to native-Russian speakers and the possible misinterpretation of the open-ended responses due to cultural differences, a focus group was conducted to triangulate data. The use of multiple sources of evidence, or triangulation, enhanced the quality of data, while also addressing construct validity "because the multiple sources of evidence essentially provide multiple measures of the same phenomenon" (Yin, 2003, p. 99). The focus group was scheduled during the students' English language course and lasted approximately one hour. Six students and their instructor participated in the focus group, which was conducted in English and led by the primary author of this paper, who has lived and worked in Russia and has intermediate Russian language skills

All survey data were analyzed using the Statistical Package for Social Sciences (SPSS 15.0). Post-hoc reliability tests using Cronbach's alpha were used to estimate the reliability of the survey instrument. The composite reliability coefficient for the survey instrument was 0.66.

Results

All of the respondents were undergraduate students at the Moscow Agroengineering University. The respondents ranged from 17-24 years with a mean age of 19 years. Forty-seven percent of the respondents were male; 53 percent were female. Thirty-two percent of students were in academic programs broadly categorized as agricultural education, 23 % were in academic programs categorized as energy in agriculture, 22% were in academic programs categorized as agricultural machinery, and 18% were in academic programs categorized as agricultural economics. For analysis, the academic programs were collapsed further into two categories: social science disciplines, composed of students in agricultural education and agricultural economics programs, and hard science disciplines, composed of students in energy in agriculture and agricultural machinery programs.

Objective One

Using the statements about sustainable development developed by Jayaratne, Martin, and DeWitt (2001), it is apparent that many contradictions were apparent in the students' responses. Almost all of the students (95 percent) indicated that farmers should be educated to use sustainable agricultural practices, while almost two-thirds (62 percent) of the students agreed that they are not clear which agricultural practices are sustainable. Furthermore, 63.4 students do not think that sustainable agriculture practices are easy to apply. Although, answers to the open-ended question, "Please describe what sustainable agriculture means to you," revealed a commonality in perceptions. Percentages of students who disagreed or agreed with the statements about sustainable agriculture are presented in Table 1.

Independent t-test results show that students' perceptions about sustainable agriculture did not vary significantly by gender or academic discipline.

Table 1

Russian Agricultural Students' Perceptions about Sustainable Agriculture (N=64)

Statement	<i>M</i>	<i>SD</i>	SD %	D %	A %	SA %	DK %
1. Sustainable agriculture practices are beneficial to the whole community.	3.20	0.69	1.7	10.2	52.5	33.9	1.7
2. Farmers should be educated to use sustainable practices.	3.20	0.48	0	3.3	71.7	23.3	1.7
3. Sustainable agriculture is useful to maintain long-term productivity of farming systems.	3.20	0.58	1.7	3.4	67.8	27.1	0
4. Sustainable agriculture practices are useful to protect the environment.	3.12	0.67	0	16.7	51.7	28.3	3.3
5. Sustainable agriculture practices are not easy to apply.	2.88	0.76	3.3	20.0	46.7	16.7	13.3
6. Diffusion of sustainable agriculture practices such as Integrated Pest Management	2.82	0.72	0	20.7	27.6	10.3	41.4

(IPM) is more an educational process than a mere delivery of information.

7. I am not clear which agriculture practices are sustainable.	2.71	0.57	3.4	19.0	60.3	1.7	15.5
8. Sustainable agriculture is an ambiguous term to me.	2.49	0.78	5.0	43.3	26.7	10.0	15.0
9. Sustainable agriculture practices can be applied only on small family farms.	2.31	0.89	13.3	46.7	18.3	11.7	10.0
10. Sustainable agriculture is not economically profitable.	2.16	0.92	23.3	38.3	21.7	8.3	8.3

Note. ¹SD=Strongly Disagree, D=Disagree, A=Agree, SA=Strongly Agree, DK=Don't Know

²Mean and Std. Dev. were calculated using values for SD, D, A and SA.

Objective Two

Contradictions were also present in students' attitudes towards local foods. Seventy percent of students responded that it is important to buy food from local farms. Over two-thirds (71.7 percent) of the students indicated that they would make an effort to buy foods that were grown in Russia if all foods had a label saying where they were grown or processed, as well as that they would prefer to buy a locally grown tomato even if it is more expensive (65 percent). Yet, 78.3 percent of students prefer to shop at supermarkets as opposed to *rinokii*, or local markets (21.7 percent). Percentages of students who disagreed or agreed with the statements about local foods are presented in Table 2.

Independent t-test results show that students' attitudes towards local foods did not vary by gender. However, there is a significant difference in students' attitudes towards local foods by academic discipline ($t=3.346$, $p=0.02$). Students in social science programs had significantly higher levels of agreement (2.81) with the statement, "It is unlikely that a young person entering farming today will be successful" than students in hard science programs (2.14).

Table 2

Russian Agricultural Students' Perceptions about Local Foods (N=64)

Statement	<i>M</i>	<i>SD</i>	SD %	D %	A %	SA %	DK %
1. I like being able to choose from a variety of fruits and vegetables all year round, even if they come from all over the world.	3.07	0.69	3.3	10.0	63.3	23.3	0
2. I (would) feel good about my family growing its own food.	3.03	0.77	5.0	10.0	53.3	23.3	8.3
3. If all foods had a label saying where they were grown or processed, I would make an effort to buy foods that were grown in Russia.	3.02	0.75	1.7	20.0	46.7	25.0	6.7

4. It is important to buy food from local farms.	2.97	0.70	1.7	20.0	55.0	20.0	3.3
5. Foods grown by a local farmer probably have less pesticide than produce available at the supermarket.	2.96	0.97	6.7	21.7	26.7	31.7	13.3
6. I would buy a locally grown tomato even if it is a little more expense.	2.87	0.77	3.3	23.3	46.7	18.3	8.3
7. Too much energy is used to transport food around the world.	2.83	0.64	1.7	21.7	55.0	10.0	11.7
8. It is important to know the farmer who grows my food.	2.72	0.91	6.7	36.7	30.0	23.3	3.3
9. When local farmers fail to compete with growers in other countries, it is just part of the free enterprise system.	2.56	0.66	6.7	20.0	48.3	0	25.0
10. It is unlikely that a young person entering farming today will be successful.	2.49	0.73	3.4	39.7	27.6	6.9	22.4
11. I am not concerned about whether the food I eat comes from nearby or far away.	2.48	0.79	10.0	35.0	41.7	6.7	6.7

Note. ¹SD=Strongly Disagree, D=Disagree, A=Agree, SA=Strongly Agree, DK=Don't Know

²Mean and Std. Dev. were calculated using values for SD, D, A and SA.

Conclusions and Educational Implications

The findings of this study suggest that contradictory perceptions about sustainable agriculture and local foods are prevalent among Russian agricultural students. In order to develop agricultural leaders who are informed about these topics, which are increasingly important in global food policy discussions, agricultural universities need to incorporate lessons about the concepts of sustainable agriculture and local food systems into their curriculum. Parr, Trexler, Khanna, and Battisti (2007, p. 525) suggest that the interdisciplinary nature of sustainable agriculture “offers a potentially effective organizing structure with which to address many of the complex societal and environmental problems in the agri-food system.”

Because the education system that Russia inherited from the Soviet era is characterized by an authoritarian style of teaching, sustainable agricultural education programs also could have potential benefits beyond simply communicating information about sustainable agriculture. In a similar vein, Parr et al. (2007) highlighted the distinctions between traditional and sustainable agricultural education programs in the United States. Traditional agricultural education programs emphasize disciplinary specialization, have a predominantly natural science research focus, employ didactic teaching methods in which learning takes place primarily in classrooms and labs, nurture students who are dependent on the teacher for learning, and rely on faculty and texts as sources of expert knowledge. Conversely, sustainable agricultural education programs emphasize systems inquiry, have an interdisciplinary research focus that takes into account socio-cultural and political economic concerns, nurture students who participate in an action-

oriented process of learning that often take place in field settings, and recognizes the co-construction of knowledge by diverse sources.

Despite the prevalence of contradictory perceptions about sustainable agriculture and attitudes towards local foods among Russian agricultural students, high levels of agreement with the statements “Farmers should be educated to use sustainable practices” and “It is important to buy food from local farms” open opportunities for educators to introduce new content through new styles of teaching. In order for the future growth and development of the Russian agricultural economy to be profitable and sustainable, agricultural universities, such as Moscow State Agroengineering University, should provide their students with an adequate understanding of the environmental, socio-cultural, and political economic consequences of the food system. This interdisciplinary, systems inquiry approach can be taught through sustainable agricultural education programs.

References

- Berg, L., Kjaernes, U., Ganskau, E., Minina, V., Voltchikova, L., Halkier, B., & Holm, L. (2005). Trust in food safety in Russia, Denmark and Norway. *European Studies*, 7(1), 103-129.
- Caldwell, M. (2002). The Taste of Nationalism: Food Politics in Postsocialist Moscow. *Ethnos Journal of Anthropology*, 67(3), 295-319.
- Feischbach, M. “Russia’s Health and Demographic Crises: Policy Implications and Consequences,” *Health and National Security Series* (Chemical and Biological Arms Control Institute, April 2003)
- Harmon, A. H. & Maretzski, A. N. (2006). A Survey of Food System Knowledge, Attitudes, and Experiences Among High School Students. *Journal of Hunger & Environment Nutrition*, 1(1), 59-82.
- Heleniak, T. (2002). Russia’s demographic decline continues. Population Reference Bureau. Retrieved August 15, 2007 from <http://www.prb.org/Articles/2002/RussiasDemographicDeclineContinues.aspx>
- Huddleston, P., Good, L. K., & Stoel, L. (2000). Consumer ethnocentrism, product necessity and quality perceptions of Russian consumers. *The International Review of Retail, Distribution and Consumer Research*, 10(2), 167-181.
- Ioffe, G., Nefedova, T. & Zaslavsky, I. (2004). From spatial continuity to fragmentation: The case of Russian farming. *Annals of the Association of American Geographers*, 94(4), 913-943.
- Jayaratne, K. S. U., Martin, R. A., & DeWitt, J. R. (April, 2001). Perceptions Regarding Sustainable Agriculture: Emerging Trends for Educating Extension Educators. Paper presented at the meeting of the Association for International Agricultural and Extension Education, Baton Rouge, LA.
- Liefert, W. (2001) Agricultural Reform: Major Commodity Restructuring but Little Institutional Change in *Russia’s Uncertain Economic Future: Compendium of Papers Submitted to the Joint Economic Committee Congress of the United States* (p. 253-282). Washington, DC: U.S. Government Printing Service.
- Orth, U. R. & Firbasova, Z. (2003). The role of consumer ethnocentrism in food product evaluation. *Agribusiness*, 19(2), 137-153.

- Parr, D. M., Trexler, C. J., Khanna, N. R., & Battistic, B. T. (2007). Designing sustainable agriculture education: Academics' suggestions for an undergraduate curriculum at a land grant university. *Agriculture and Human Values*, 24, 523-533.
- Robertson, A. (1998). Food, nutrition and health in the Russian Federation. *World Health Organization*. Retrieved on August 15, 2007 from www.euro.who.int/document/e58453.pdf
- Verlegh, P. W. J. & Steenkamp, J. (1999). A review and meeta-analysis of country-of-origin research. *Journal of Economic Psychology*, 20, 251-246.
- Wilkins, J. L., Bowdish, E. & Sobal, J. (2002). Consumer Perceptions of Seasonal and Local Foods: A Study in a U.S. Community. *Ecology of Food and Nutrition*, 41, 415-439.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Zhuchenko, A. A. (2005). Promoting Sustainable Agriculture and Rural Development in Russia: Strengthening the Role of Farmers. In N. P. Laverov (Ed.), *Regional Sustainable Development Review: Russia in the Encyclopedia of Life Support Systems*. Retrieved September 5, 2007 from <http://www.eolss.net>.