

DIVERSIFICATION AND DEVELOPMENT IN THE KAKHETI FOOD AND AGRICULTURE SECTOR

Background and Recommendations

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After independence and the subsequent conflicts, Georgia's economy suffered massively due to shocks to the system from the breakdown and inherent inefficiencies of the centrally controlled supply-distribution systems prevalent during Soviet times. The country's agriculture suffered severely during these years as well. However, it was also through reliance on agriculture that the country was able to survive as effectively as it did during this period as a result of the distribution of land to vast numbers of its citizens which allowed them to produce enough food to survive.

Beginning in the mid-1990s, Georgia's economy, to include the food and agriculture sector, began to recover. While for agriculture this recovery was very modest at first, there were increasing signs in the 2000-2005 period that a breakthrough might be about to happen for a number of agricultural and food products, to include many produced in Kakheti. Then came the Russian embargo, rising energy prices, the August war, and a declining economy in many countries to which Georgia exported or hoped to export its food products. All these events reversed much of the progress which had been made in the food and agriculture sector and created a new set of challenges to those already in place, such as limited credit availability, small and fragmented farms, aging equipment, and the absence of an effective agriculture research, education, and extension system. Nowhere in Georgia were these effects and challenges more greatly felt than in Kakheti, the wine and bread basket of the nation.

Yet in spite of these increasingly difficult problems, neither the Georgian government nor the people of

Kakheti have had their optimism dampened as to what might be accomplished in the region or their belief daunted as to their ability to make it a reality. As a consequence, UNDP is working closely with the Government of Georgia, the Governor's Office, and others within the region to meet the challenges found, capitalize on the region's vast potential, and, as a result, bring about sustainable development which will materially improve the lives of local residents and benefit the nation as a whole.

Given the importance of agriculture in the region, it is my pleasure to present this report which provides extensive background information and perspectives on Kakheti's food and agriculture sector. More importantly, the report presents a broad range of recommendations which, if adopted and successfully implemented, will help bring about the progress and change within the region which we all believe is possible. We sincerely hope that this report, in concert with the Kakheti Regional Development Strategy, will be the first steps towards new multi-entity partnerships (donors, government, farmers, investors, agro-industries, universities) which will ultimately result in a revitalized, significantly expanded, and more profitable food and agriculture sector in Kakheti. To that end, UNDP looks forward to continue its work in this region and in this sector.

**UNDP Resident Representative
Robert Watkins**



Agriculture has a rich and distinguished history in Georgia with a more varied range of products than found in any other of the former Soviet republics. At its peak, our nation provided over 70% more food and agricultural goods to those outside our borders than we were required to import. Within this vital industry that provides a livelihood to half our nation's citizens, there is no more important region than Kakheti. More than one-third of our food and agricultural production comes from this easternmost part of Georgia even though it has less than 10% of the nation's population. As important as Kakheti's contribution is today, it has vast potential to contribute even more in the future.

Yet, in spite of this potential waiting to be tapped, the region also faces major challenges to its realization. Perhaps paramount among these is the Russian embargo imposed in late 2005 and early 2006 which severely hurt our all important wine industry by eliminating over 90% of export markets. However, the wine industry alone was not harmed by these trade restrictions. It also severely affected the ability to export fresh fruits and vegetables produced in the region. Thus, Kakheti is not simply looking at how to take advantage of production and value-added opportunities which had never been realized since independence but also how to overcome the hardships which have been inflicted by the embargo.

In both instances, this will require market and

product diversification as well as additional vertical integration in products now simply sold in their raw or basic processed form. Additionally, creative new approaches must be found to secure the needed investment capital, to identify and adapt appropriate technologies, to provide farmers the intellectual and physical tools they will need to become more productive and profitable, and to craft a regulatory environment which is supportive rather than suppressive of the industry and region it is trying to help.

The UNDP report, Diversification and Development in the Kakheti Food and Agriculture Sector, is an invaluable first step in assisting Georgia and the region to address effectively these challenges. The Ministry of Agriculture and I personally, look forward to working with the Governor of Kakheti, the Kakheti Regional Development Agency, UNDP, and others to realize Kakheti's vast food and agricultural potential to the benefit of its people and the nation as a whole.

Minister of Agriculture of Georgia

Bakur Kvezereli

ABBREVIATIONS:

ADA	Agribusiness Development Activity
AOC	Appellation d’Origine Contrôlée
AR	Autonomous Republic
ATC	Agricultural Technical Colleges
CIS	Commonwealth of Independent States
CNFA	Citizens Network for Foreign Affairs
DFA	Dairy Farmers Association
ENP	European Neighborhood policy
EU	European Union
EUREGAP	Euro Retailer Produce Working Group: Good Agricultural Practice
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GEL	Georgian Lari
GRM	GRM International
HACCP	Hazard Analysis and Critical Control Points
ISO	International Organization for Standardization
JSC	Joint Stock Company
KRDS	Kakheti Regional Development Strategy
MCG	Millennium Challenge Georgia
MTEF	Medium Term Expenditure Framework
NGO	Non Governmental Organization
RDA	Regional Development Agency
SIDA	Swedish International Development Cooperation Agency
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAT	Value Added Tax
WTO	World Trade Organization

KAKHETI FOOD AND AGRICULTURE SECTOR: A SUMMARY OF RECOMMENDATIONS FOR DEVELOPMENT

1. INTRODUCTION

While the primary purpose of this report is to provide background information on and development recommendations for the food and agriculture sector in Kakheti, the second of these—development recommendations—is by far the more important. Therefore, rather than presenting an executive summary which touches on all aspects of this report to include the broad range of statistical and descriptive data on the sector, a Summary of Recommendations for Development was thought to be most useful to the reader. If the reader wishes to have a greater appreciation of these recommendations and the context upon which they are based and within which they must function if implemented, the individual chapters of this report are sufficiently concise that they, in essence, are already summaries of the vast and complex system which is Kakheti's food and agriculture sector.

It should be understood that the recommendations made in this report, while felt to have significant merit, are based on relatively limited field work, interviews, and secondary source research. Thus, each should be explored in further depth before actually being implemented (or at least implemented in the manner suggested). Unfortunately, in Georgia, there is a long history since independence of moving to implement some new concept, possibly one with considerable merit, without sufficient forethought, planning, resources, and management. As a result, many of these initiatives fail or fall short of the expectations for them.

The Office of the Governor in Kakheti and the Kakheti Regional Development Agency should have the primary responsibility for moving this process ahead, that of further evaluating and eventually adopting the most promising and critical of these recommendations. However, these two entities have limited human and financial resources for doing so. Additionally, certain of these recommendations are beyond the scope and responsibility of those in the region and require involvement by national ministries and possibly Parliament and the Chancellery. Thus, a task force should be created which includes representation from (1) all the key governmental entities at the regional and national level, (2) the private sector, and (3) donors who may be open to providing financial and technical assistance.

The recommendations presented are drawn from the various chapters of this report and are organized into three main categories:

- Potential investment opportunities
- Public planning and policy
- Other support activities

As this is a “summary” of recommendations, only the basic idea or concept is outlined here. For a more complete understanding of what is proposed, the reader should refer to the appropriate section and chapter.

2. SUMMARY OF RECOMMENDATIONS

2.1 Potential Investment Opportunities

The following are potential investment opportunities that are felt to exist in Kakheti and for which market and/or feasibility studies should be conducted. Their principal market orientation is found in parentheses at the end of each. The order listed is not indicative of importance or likelihood of feasibility.

Fruits and Vegetables

1. Fruit and berry production, processing, and/or consumer packaging, e.g., peaches, nuts, strawberries, other fruits (export/domestic market)
2. Table grape production and packing (domestic market/possibly export)
3. Tomato production, processing, and consumer packaging (primarily domestic market)
4. Expanded melon and potato production for the fresh market (domestic)

Field Crops

5. Malting barley production (domestic market)
6. Expanded oilseed (sunflowers, soybeans) production, processing, refining, and consumer packaging (domestic market)
7. Silage feed production (domestic market)

Livestock

8. Buffalo milk products, e.g., yogurt, cheese (export/domestic market)
9. Expanded milk and cheese production (domestic market)
10. Western quality beef production, slaughter, and marketing (domestic market)
11. Commercial pork production in confined modern facilities (domestic market)

Poultry

12. Expanded egg and poultry meat production (domestic market)
13. Hatching egg production (domestic market/possibly export in Caucasus)

Production Inputs/Other

14. High quality, certified seed and nursery stock production (Export/domestic market)
15. Farm machinery leasing and rental (domestic)
16. Commercial cold storage facilities as well as dry storage options (domestic)
17. Organic and other niche market production of a range of agricultural products (primarily export)
18. Agro-tourism (to include wine tourism) integrated with cultural and natural attractions in the region (foreign/domestic)

2.2 Public Planning and Policy

The following are those actions that it is recommended the national government undertake in planning, policy, and enforcement in order to increase the probability of the successful diversification and development of the food and agriculture sector in Kakheti:

1. Preparation, adoption, and implementation of a comprehensive national food and agriculture strategy upon which regional strategies can be integrated and based
2. Improved government intervention in the food and agriculture sector, specifically with respect to:
 - i. Consistency
 - ii. Pre-planning
 - iii. Type
 - iv. Program design
 - v. Management/oversight
 - vi. Private sector involvement, e.g., farmers, banks, input suppliers
3. Enforcement of WTO and other international regulatory requirements, to include the prevention of product dumping, to the degree possible to protect and encourage the development of the food and agricultural sector
4. Implementation and enforcement of the food safety law no later than January 2010
5. Aggressive and expanded enforcement of laws against the adulteration and falsification of Georgian wine, especially within the country but also internationally
6. Increased government involvement in insuring the represented quality of production inputs (e.g., seed,

- nursery stock, fertilizer, pesticides) and food products (e.g., AOC branding, organic, meat and dairy products)
7. Improved laws and regulations related to leasing, collateralization, and other factors (e.g., land titles) which have the potential to increase the flow of funding to the food and agriculture sector
 8. More effective national diversification strategies with supporting programs for food and agricultural production and marketing to help offset the effects of the Russian embargo

2.3 Other Support Activities

There are a broad range of other actions which can be taken by government, donors, and the private sector individually and in partnership which will also increase the probability of the successful development of the food and agriculture sector in Kakheti. These include:

1. Expansion of existing and development of new creative approaches to significantly expand the availability and terms of loans to the food and agriculture sector
2. Development and implementation of an aggressive investment promotion initiative to include:
 - Revised and expanded investors guide/handbook
 - Cost sharing programs with potential investors
 - Targeted international recruiting, i.e., specific foreign firms with a higher probability of investing in Georgia with its specific commodities
 - Hosting and participating in trade missions
 - Investor assistance office
 - Market and feasibility assessment studies
 - Opportunity profiles tailored to specific investor groups
3. Strengthen the capabilities of the local Chamber of Commerce/Business Consulting Network in order to assist local farmers and businessmen to learn more about and possibly take advantage of investment opportunities
4. Prepare municipality specific guides as to practical factors of potential interest to an investor, e.g., soil maps, water and utilities availability, government land available
5. Improve and expand irrigation availability and delivery in Kakheti to include:
 - That infrastructure which existed during Soviet times which is still financially viable and technically suitable
 - Smaller systems tapping more localized surface and groundwater sources
 - Improved management of water delivery
 - System for financing water charges
6. Improve communications between government and farmers, farmers and other farmers, and donors and government so as to improve the awareness of problems and the effectiveness and efficiency of development initiatives
7. Develop more effective means for delivering and supporting agricultural research, education, and extension which will assist Kakheti's farmers to become more productive and profitable while not creating unnecessary inefficiencies and bureaucracy within government
8. Develop, make available, and keep current an atlas of agricultural lands available for purchase or lease from the government in the Kakheti region
9. Promote and assist the development of farmers cooperatives, e.g., production inputs, credit, technical assistance, processing, packing, marketing
10. Promote and assist the development of farmers associations which can represent farmer interests and help solve issues of concern or take advantage of opportunities
11. Improve the national system for monitoring and protecting livestock health to include consideration of universal vaccination, a tagging system, progress towards all livestock products being inspected and graded at place of slaughter or manufacture, and a fair compensation program when healthy animals must be slaughtered for the national good
12. Undertake a range of activities not referenced elsewhere which will enhance and strengthen the Kakheti wine industry, to include:
 - Develop and implement a viable national strategy for expanding and diversifying wine exports
 - Conduct of a cadastral survey
 - Assist in the replanting and rehabilitation of vineyards to more marketable and productive varieties and hybrids
 - Identify historic small hectare varieties which may have potential for niche or expanded markets
 - Train industry farmers and personnel in varietal identification
13. Promote and support public-private partnerships in such areas as:
 - Farm machinery
 - Input supply
 - Agricultural extension
 - Investment promotion
 - Investment finance and farm credit
 - Policy development
 - Export promotion

CHAPTER 1. INTRODUCTION

1.0 Background

In mid-2006, then Governor of Kakheti, Petre Tsiskarishvili, discussed with UNDP the need for a development strategy for this easternmost region of Georgia. The motivation for preparing such a strategy was driven primarily by two considerations:

- The adverse effects of the Russian embargo on the region, most especially grape producers and the wine industry, and
- The possibility of tapping the agricultural, agro-industrial, tourism, and other potential felt to exist in Kakheti for the social, nutritional, and economic betterment of the region's citizens.

Additionally, with Georgia's possible participation in the EU's newly instituted European Neighborhood Policy (ENP), the need for and interest in planning for the country's individual regions gained increased attention within government and, as a result, within the donor community that wished to support such initiatives.

In the late summer of 2006 UNDP brought in a foreign expert to help develop the overall concept for a regional planning, development, and diversification initiative for Kakheti. Based on this report, the Kakheti Regional Development Strategy (KRDS) initiative was formally approved in October of that year. However, actual work could not begin until a project manager was in place which occurred in March 2007.

Beginning in the fall of 2007, Georgian experts were hired to conduct research and write background papers on the key food and agricultural issues which would be critical components of the KRDS initiative. In December 2007 a foreign expert from UNDP Bratislava Regional Office also began work with the project team and the UNDP Economic Office to evaluate what had occurred to date and to develop further the approach and methodology for preparing the actual KRDS document.

In mid-2008 sectoral working groups were established in Kakheti in wine, agriculture and the economy; infrastructure and tourism; social issues (e.g., health, education); and environment/waste management. The first two of these working groups used the food and agricultural issues papers prepared by the Georgian experts, as well as a number of other sources, as background materials for their deliberations and recommendations. At the end of the summer, two of these Georgian experts

integrated the output of the various working groups into a draft regional development strategy. Also at this time, a Georgian UNDP team visited Romania to learn more of that country's approach to regional development planning and development. Based on this trip, the draft regional development strategy was refined and submitted to the local (Kakheti) development committee for review in September. The document was also provided to the new Governor of Kakheti, Giorgi Gviniashvili, for his input. The regional strategy was then finalized, translated, and eventually published in April 2009.

During the same fall period that the KRDS was being finalized, the decision was made to reorganize, integrate, and enrich the independent background papers that had been done by the four Georgian specialists in the food and agricultural sector. This work was begun in January 2009. The final product is this report which will be used as a companion piece to the Kakheti Regional Development Strategy. Its English version was completed in April with a Georgian version to follow at a later date.

2.0 Terms of Reference

The primary objective of the resulting study was to identify possible economic diversification opportunities in the Kakheti Region and the measures needed to support the emergence of the most promising of these. Initially it was proposed that a study team be tasked to address the following:

1. Map existing private sector activity in the region in terms of subsectors, enterprises, location, growth trends, and markets;
2. Identify in which subsectors the commercialization and growth of existing enterprises might be feasible and determine needed support;
3. Identify possible new private sector development opportunities through assessing markets and constraints;
4. Review potential for agricultural diversification and growth in terms of production feasibility and market opportunities including possible new contractual relationships with processors, wholesalers, and retailers;
5. Review opportunities for the use of farmer-controlled businesses, e.g., cooperatives or associations for input supply, marketing, production, and processing;

6. Review the provision of private sector and agricultural financing in the region, determine unserved needs, and make proposals as to ways these needs might be met;
7. Review support provided by local business consulting centers and, as required, make proposals for additional services aimed at supporting economic diversification; and
8. Review infrastructural constraints (including gas, electricity, telecommunications, water, waste water, roads, and bridges) on private sector development and make proposals for priority actions in relieving these constraints.

Over time the project concept evolved whereby the last of these (infrastructure) was to be addressed as part of a separate but related regional development plan that concentrated primarily on government-type services and infrastructure. Infrastructure issues would be included in the agricultural/ agro-industrial portion of the Kakheti initiative only if they posed potentially major obstacles to the realization of opportunities identified as part of the study. Most of the other tasks outlined above were to be part of the study with some minor variations. Essentially, it was conceived that the study would have two main purposes:

- Provide a background/resource document as to the Kakheti food and agriculture sector and its relationship to the national food and agriculture sector
- Identify problems, constraints, resources, and possible opportunities that might hinder or promote economic growth in the Kakheti food and agriculture sector

3.0 Initial Study Components

As referenced above, in the fall of 2007 contracts were signed with four Georgian specialists to undertake the food and agricultural component of the Kakheti Regional Development initiative. These were:

- Lasha Dolidze, Team Leader
- Beka Tagauri, Primary Production
- Kote Kobakhidze, Food Processing and Distribution
- Ana Godabrelidze, Grapes and Wine

As a result of their work, four papers were produced in early 2008:

1. Kakheti Region: Review of Primary Agricultural Production
2. Existing Situation on the Market Perspectives for the Development of the Processing Industry in the Kakheti Region
3. Viticulture and Wine-Making Sector: Existing Conditions for Further Development in the Kakheti Region
4. Future Commercialization and Specialization Developments in Kakheti Agriculture

Additionally, within one or more of these papers, there were sections on the wholesale and retail distribution of food and agricultural products as well as on methodological principals of research.

4.0 Final Report Structure and Content

Due to the passage of time since these initial papers were prepared, the food and agriculture sector within both Georgia and Kakheti has continued to evolve. Additionally, two more years of data had become available upon which to base assessments of trends and their possible implications for the future. As a consequence, it was decided in December 2008 to update, integrate, and further enrich the four independent papers whose field work was conducted in late 2007. David Land and Irene Mekerishvili were contracted to work with the KRDS Project Manager, Vakhtang Piranishvili, and the original authors to manage and complete this process.

While the updated report does meet its two objectives (provide a background document of the Kakheti food and agriculture sector, and identify problems, constraints, resources, and opportunities important to the development of this sector), it is important to understand what the document is not intended to do. With the time available for conducting research, this report cannot purport to be an in-depth analysis of all facets of the food and agriculture sector in Kakheti, its municipalities, or all the opportunities and challenges facing this sector in the region. One could easily prepare reports of equal length on each of the agricultural commodities and challenges. Additionally, further investigation would likely generate additional areas of interest, either as opportunities to be pursued or challenges to be addressed. Nonetheless, the report in its current form will provide its reader with a solid foundation as to the food and agriculture sector in Kakheti and those areas which warrant further investigation or elaboration.

CHAPTER 2. KAKHETI REGION: A REVIEW OF PRIMARY AGRICULTURAL PRODUCTION

2.1 Introduction

Kakheti is the most eastern of eleven administrative-territorial units (regions) in Georgia and includes eight rayons (now referred to as municipalities). It is bounded by Russia and Azerbaijan on its north, east and south and by the Georgian regions of Mtskheta-Mtianeti and Kvemo Kartli to the west. It is considered by many to be Georgia's most important and richest agricultural region. Within its boundaries are found 38% of the total agricultural land in the nation. Over 80% of the region's population of 400,000 is employed in agriculture. Thus, this sector dominates, defines, and drives Kakheti's economic and social development. Any regional development strategy must of necessity focus on the strengths and weaknesses, opportunities and problems associated with its food and agricultural sector.

This chapter will present an analytical review of Kakheti's existing agricultural production and likely development trends based on current market conditions. Additionally, it will touch on strengths, advantages, challenges, and potential for expansion of selected sub-sectors within the region. Due to its importance in both Kakheti and Georgia as a whole, the region's viticulture and wine sector will be discussed in a subsequent chapter.

It should be noted at the beginning of this chapter that in 2006, the Department of Statistics changed its methodology for collecting agricultural data. After the reform of local governance carried out in autumn of that year, the institution of statistician enumerators of rayons (municipalities) which had previously made it possible to obtain aggregated information at the level of municipalities was eliminated. Thus, presently the main source of agricultural information is the sample survey of agricultural holdings whose first round was carried out in February 2007. This new sample size (about 5,000 holdings out of over 650,000) is not sufficient for obtaining reliable information on the municipality level which would require a sample size approximately five times that now being taken. ***In addition to the Department of Statistics no longer being able to provide municipal level data on agriculture, it is felt that this change in data collection design and sample size has also materially changed the aggregate numbers for both regions and the country as a whole.*** As will be seen throughout this chapter, it would appear that agricultural production and livestock numbers have in many cases significantly declined in 2006

from the preceding year. While this may have occurred in certain situations due to weather or other factors, it would not be as widespread as seems to be indicated by the data now presented for agriculture. ***In fact, rather than actual conditions in the agricultural sector, it may well be that this change in data collection methodology is responsible for the apparent significant decline agriculture's share of GDP since 2005. Thus, the reader should use 2006 and later data with caution with respect to extrapolating trends from earlier years.***

2.2 Geography and Climate

Mountains and the valleys they create are the dominant geographic features of Georgia. The Likhi Range divides the country into eastern and western halves. Historically, the western portion of Georgia was known as Kolkhi while the eastern plateau was called Iberia. Within Kakheti the high Caucasus Mountains separate it from Russia. Down the middle of the region from west to east is found the much lower Gombori range. Between these ranges is the Alazani Valley through which flows one of two major rivers in the region, the Alazani. South of the Gombori Range is the second major river, Iori, which also flows roughly west to east. These two mountain ranges, two rivers, and two valleys influence and dominate the characteristics and potential for agricultural production in Kakheti and distinguish it from the agricultural production found in the western regions of the country.

Western Georgia's landscape ranges from lowland marsh-forests, swamps and temperate rain forests to eternal snows and glaciers while the eastern part of the country in Kakheti even contains a small segment of semi-arid plains characteristic of Central Asia. In contrast with western Georgia which has some extensive coniferous forests, nearly 85% of the forests in Kakheti are deciduous species with beech, oak, and hornbeam dominating. Maple, aspen, ash, hazelnut, and yew (in the upper Alazani River valley) are also found. In general, its forests occur between 500-2,000 meters with alpine zones present in elevations above that.

The climate of Georgia is extremely diverse considering the nation's small size. The Greater Caucasus Mountain Range along Georgia's northern boundary with Russia plays an important role moderating Georgia's climate by protecting the nation from the penetration of colder air masses from the north. The Lesser Caucasus Mountains on its southern

boundary with Armenia and Turkey partially protect the country from the influence of dry and hot air masses from the south.

Within Georgia there are two main climatic zones, again roughly separating the western and eastern parts of the country. Much of western Georgia lies within a humid subtropical zone with annual precipitation ranging from 1,000-4,000 mm (39-157 inches) and tends to be uniformly distributed throughout the year (although rain can be especially heavy during autumn). The climate within the west can vary significantly with elevation. While the higher elevations experience cool, wet summers and snowy winters (greater than 2 meters), the lowland areas are relatively warm throughout the year allowing the production of sub-tropical crops such as citrus.

Eastern Georgia has a transitional climate from humid subtropical to continental. The region's weather patterns are influenced both by dry Central Asian-Caspian Sea air masses from the east and humid Black Sea air masses from the west. However, penetration of the humid air masses from the Black Sea is often blocked by the Likhi and Meskheti mountain ranges that separate the west from the east. As a result, annual precipitation is considerably less in the east at 400-1,600 mm (16-63 inches). The wettest periods are generally during the spring and fall and the driest during summer and winter. Much of eastern Georgia, especially in lower lying areas, experiences hot summers and relatively cold winters. As would be expected, elevation plays an important role with areas above 1500 meters being relatively cooler and those above 2000 meters even experiencing some frost during the summer months. Agricultural scientists have divided Georgia into 13 zones

and 11 sub zones according to their suitability for various agricultural productions. All of Kakheti is included in Zone 1. Sub zone 1a is the northern-western portion of the Alazani plain which includes the municipalities of Akhmeta, Telavi, Gurjaani, and Kvareli. Sub zone 1b is the southern-eastern part of the Alazani Plain with Lagodekhi as its only municipality. Sub zone 1c (sometimes referred to as Gare Kakheti) is essentially the Iori River valley with its three municipalities of Signagi, Dedoplis Tskaro, and Sagarejo.

In summary, it is these geographic and climatic characteristics which distinguish that agriculture which is best suited for Kakheti versus the rest of the country. While on one hand it cannot produce such subtropical fruits as citrus, on the other, it is ideally suited for stone fruits. Its extensive flat or gently rolling expanses make mechanization more likely than in western Georgia while its heavier spring and fall rains can adversely affect both planting and harvest in certain places. Thus, any attempts to add new or expand existing crops must only be undertaken after taking these various factors into consideration.

2.3 Demographics

After independence Georgia's population steadily declined although it has begun to stabilize and possibly even increase ever so slightly in recent years. In 1990 the country's population was estimated at approximately 4.7 million. In 2006 the total population of Georgia was closer to 4.4 million. Just under 10% of the Georgians live in Kakheti, or approximately 407,000 in the 2002 census, with 80% engaged in agriculture. Table 2.1 reflects population by municipalities within Kakheti as well as those living in cities.

Table 2.1: Kakheti Population by Municipalities

<i>Municipality</i>	<i>Total Population</i>	<i>City Residents</i>
Akhmeta	41,641	8,571
Gurjaani	72,618	40,029
Dedoplis Tskaro	30,811	7,724
Telavi	70,589	21,805
Lagodekhi	51,066	6,875
Sagarejo	59,212	12,566
Signagi	43,587	8,212
Kvareli	37,658	9,045
Total	407,182	84,827

Source: 2002 National Census

2.3 Agricultural Resources

2.3.1 Land

In spite of some of its climatic and geographic challenges, Kakheti is still rich with agricultural land resources. As reflected in Table 2.2, Kakheti is the leading region in Georgia for most major categories of agricultural land: arable (annually cultivated, or fallow but available for annual cultivation), perennial (tree, shrub, and vine crops), and permanent pasture. As a result of these land types as well as the climate found in the region, grapes, cereals, and cattle (beef/dairy) are the dominant agricultural products grown. (Note: The data reflected in Table 2.2 varies significantly from that reported by the Department of Statistics for 2006, especially with respect to arable cropland at 462,000 hectares vs. the Ministry of Environment Protection and

Natural Resources estimate the year before of 802,000 hectares. This may reflect the change in methodology employed by the Department of Statistics for 2006.)

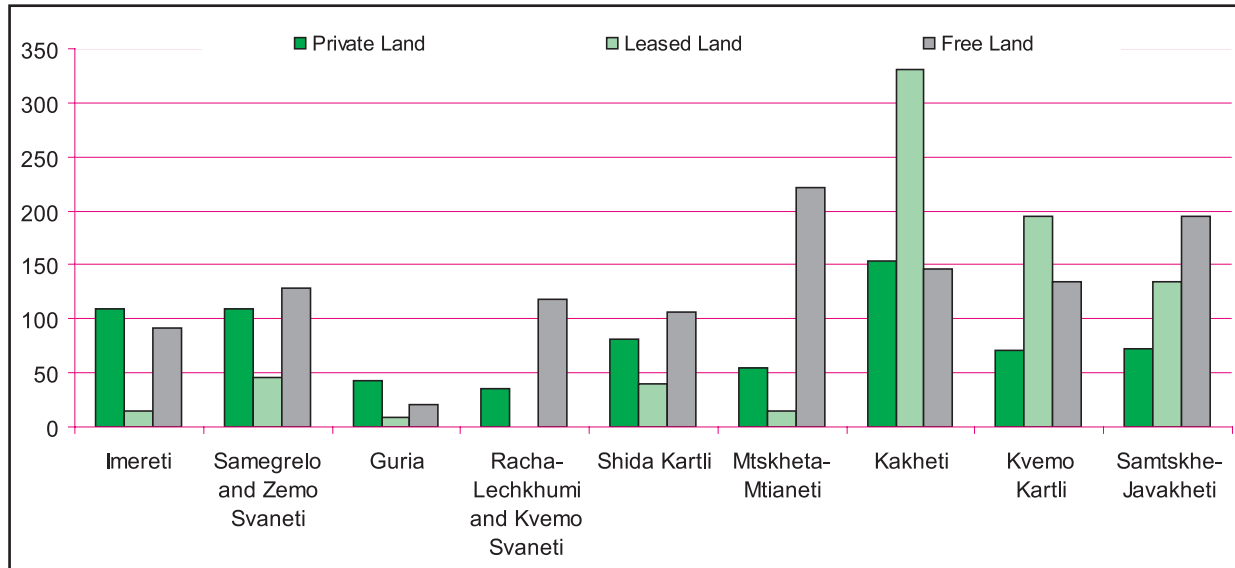
In 1992 the process of agricultural land reform began with the establishment of a “privatization fund” which included some 763,000 hectares, or just over 25% of all agricultural lands in Georgia of all types. From this fund, up to 1.25 hectares of arable land was distributed free to rural households residing in villages and towns, and up to 5 hectares of pastureland to those engaged in livestock raising in the highlands. In total about 437,000 hectares of arable (annually cropped) land was distributed to farm households 181,000 hectares of orchards and other perennially cropped land; 42,000 hectares in permanent hay lands; and 84,000 hectares in permanent pastures. This represented 62% of all cropped land and 4-5% of meadows and pastures.

Table 2.2: Georgia Agriculture Land Resources (000 ha)

<i>Description</i>	<i>Total Agricultural Land</i>	<i>Arable Cropland</i>	<i>Perennial Cropland</i>	<i>Mowed Land</i>	<i>Pasture Land</i>	<i>Living Area, Buildings, and Courtyards</i>
Imereti	216.2	86.5	29.0	1.6	95.9	3.2
Samegrelo and Zemo Svaneti	283.5	71.1	39.2	2.4	165.0	5.8
Guria	73.1	22.4	24.8	1.2	23.9	0.8
Racha-Lechkhumi and Kvemo Svaneti	154.1	8.7	3.4	25.8	115.8	0.4
Shida Kartli	226.6	79.4	38.2	7.5	100.2	1.3
Mtskheta-Mtianeti	291.3	38.6	7.5	14.6	229.2	1.4
Kakheti	631.1	217.7	46.5	2.8	362.0	2.1
Kvemo Kartli	401.0	137.1	11.9	38.5	210.3	3.2
Samtskhe-Javakheti	400.5	82.5	3.0	31.9	282.1	1.0
Apkhazeti AR	217.3	44.8	44.1	2.0	126.4	0
Adjara AR	73.7	10.4	16.3	7.2	38.9	0.9
Samachablo	57.9	2.9	0.1	8.0	46.9	0
Georgia	3 026.3	802.1	264.0	143.5	1 796.6	20.1

Source: Ministry of Environment Protection and Natural Resources, 2005

Figure 2.1: Georgia Agriculture Land by Types of Ownership (000 ha)



Source: Ministry of Environment Protection and Natural Resources, 2005

The remainder of agricultural lands stayed in government hands. However, even for this land, at least for the previously cropped portions, the possibility existed for individuals to have personal use and control through a system of leases. For the balance of grazing lands, there was access for community use, but individuals did not specifically control access to or care for such land.

In 2005 a law was passed which began the second stage of land privatization to move much of the remainder of the nation's agricultural lands into private hands. A three step privatization process was envisaged for these remaining government lands:

- For lands already leased, the current lessee would have the opportunity to purchase the land directly from the government.
- For lands not leased, or for any lands leased which the current lessee did not wish to purchase, a special auction would be held whose participation would be limited to the physical and legal entities registered in the community in which the auctioned land was situated.
- For lands not sold during this special auction, an additional auction would be held open to every citizen and legal entity registered in Georgia.

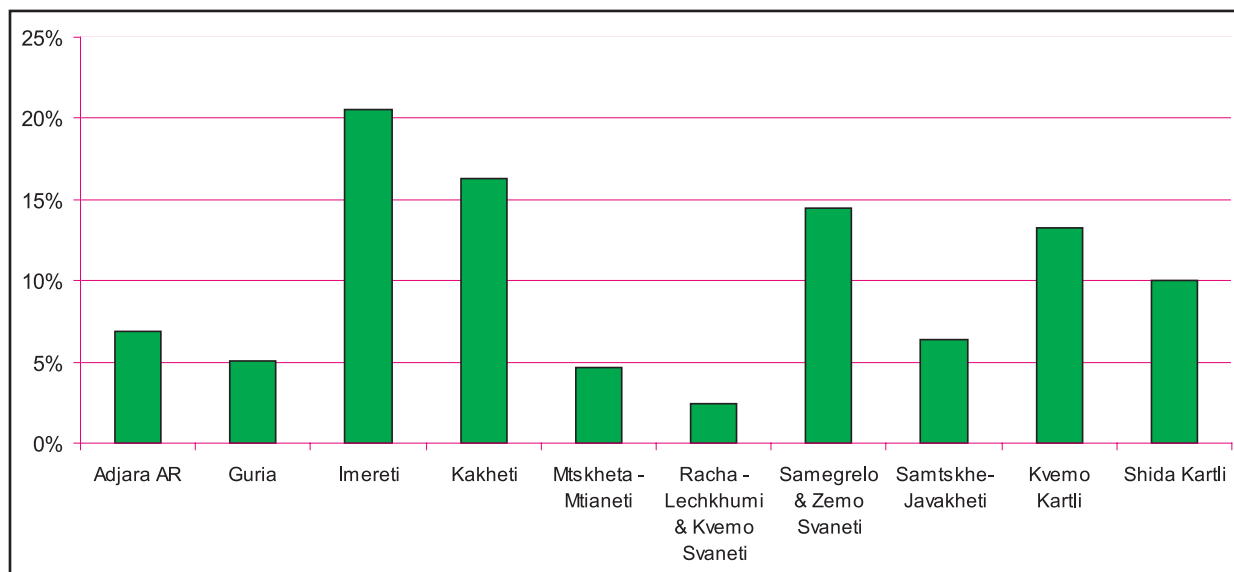
While in theory all remaining government lands were to be sold in this manner, practically speaking, government has chosen to hold back some lands that can be used to attract investors in the food and agriculture sector under the 100 Enterprises and other similar initiatives.

Figure 2.1 reflects land ownership before the second stage of land privatization was begun in 2006. Given that Kakheti has the greatest amount of agricultural land of any of Georgia's regions, it is not surprising to find that it also has the largest amount of both owned and leased (from the government) land. However, with respect to that land which was neither privatized nor leased to farmers by government, i.e., "free land," it has less than 150,000 hectares which lags both Mtskheta-Mtianeti and Samtskhe-Javakheti. Thus, while it does still have significant lands potentially available for attracting new investments in this sector, the other two regions have in the range of 200,000 hectares.

Unfortunately, in early 2009, there was no readily available government statistics summarizing the degree second stage privatization has occurred since 2006. Thus, it is not possible to analyze the amount and qualities of land still available for use in attracting new investment to the food and agricultural sector in Kakheti. This is information that should be prepared and distributed to the Office of the Governor of Kakheti on an annual basis so that investor recruitment initiatives can be conducted more effectively.

The 2005 agricultural census indicated that there were 726,000 farms in Georgia. However, roughly 70,000 of those had less than 0.10 hectare and are generally not considered as farms per se although they do produce some foodstuffs for home consumption. The balance of 656,000 subsistence and commercial farms had an average holdings size of just under 1.5 hectares. While the initial privatization

Figure 2.2: Proportion of Georgian Farms by Regions, 2005



Source: Department of Statistics, 2005

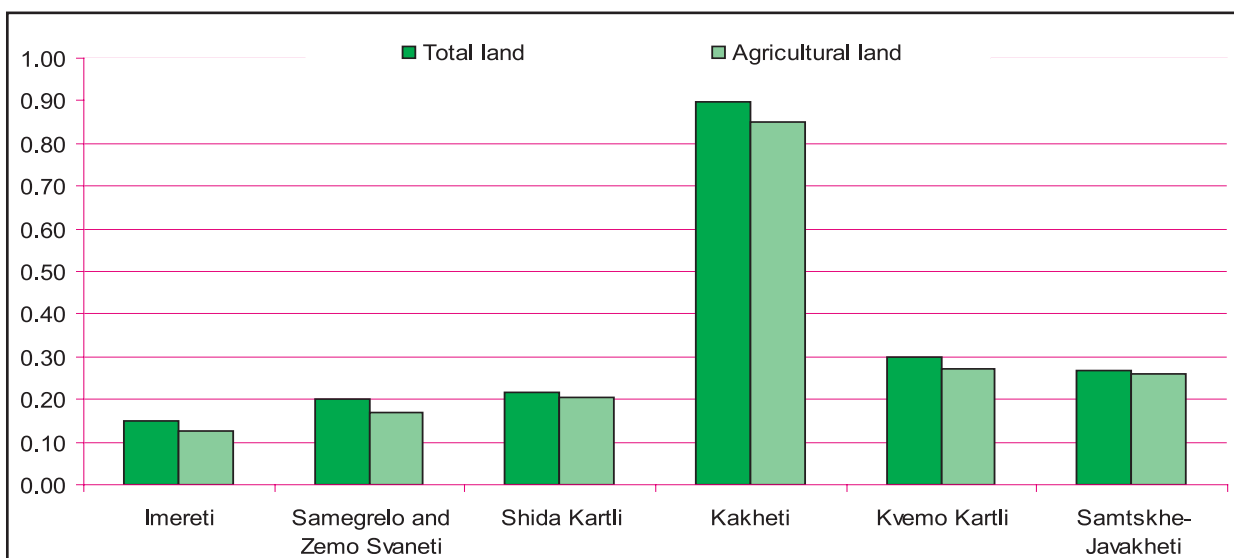
was to have distributed 1.25 hectares per household, this apparently only applied to families already engaged in farm work at independence. Other rural and village households received something less than 1.25 hectares. In 2005 there were 16,000 farms with holdings of 4 hectares or greater. These 2.5% of all farms controlled 369,000 hectares (owned or leased), or 40% of all farmland in Georgia.

Figure 2.2 presents the percentage of all Georgian farms found in each region. Kakheti has the second most number of farms after Imereti (approximately 16% of all

farms nationally vs. just over 20% in Imereti). However, as Kakheti has nearly three times the amount of agricultural land as Imereti, its average farm size is nearly fourfold greater.

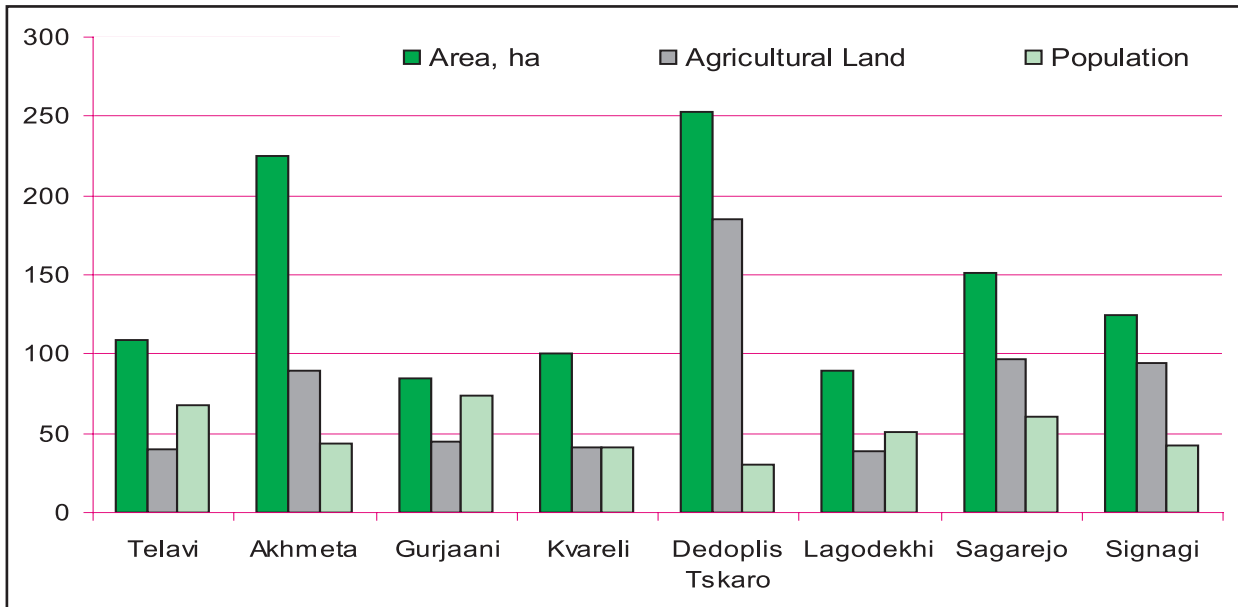
The distribution of land (both total and agricultural) per capita is presented by region in Figures 2.3. Kakheti followed by Samtskhe-Javakheti have by far the most land per capita (both total and agricultural) of any of Georgia's regions. While part of this is due to the absence of any large cities such as found in Imereti or Kvemo Kartli (Kutaisi

Figure 2.3: Land Resources Per Capita by Region (ha)



Source: Department of Statistics, 2002 National Census

Figure 2.4: Kakheti Land Resources and Population by Municipalities



Source: Ministry of Environment Protection and Natural Resources, 2005; Department of Statistics, 2002

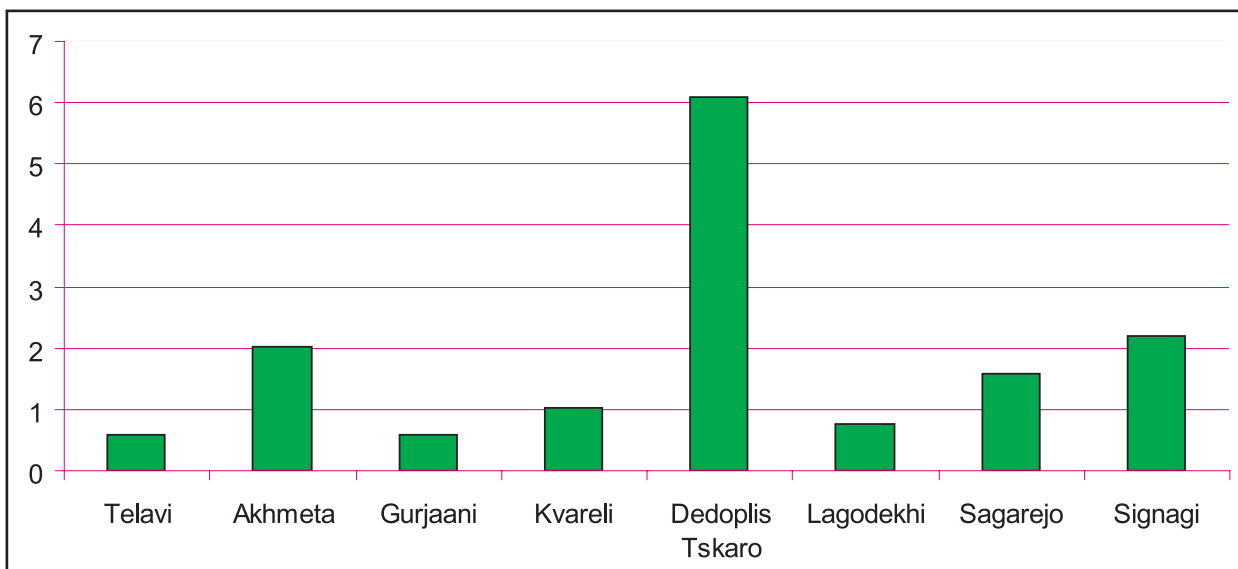
and Rustavi respectively), in the case of Kakheti, it is also reflective of the absolute size and prevalence of agricultural lands within the region.

Dedoplis Tskaro is the largest municipality in Kakheti with the most agricultural land followed by Akhmeta, Sagarejo, and Signagi (see Figure 2.4). The two municipalities with the largest amounts of agricultural land (Dedoplis Tskaro and Akhmeta) have the smallest populations. Thus, as seen

in Figure 2.5, these two municipalities along with Signagi have the most agricultural land resources per person.

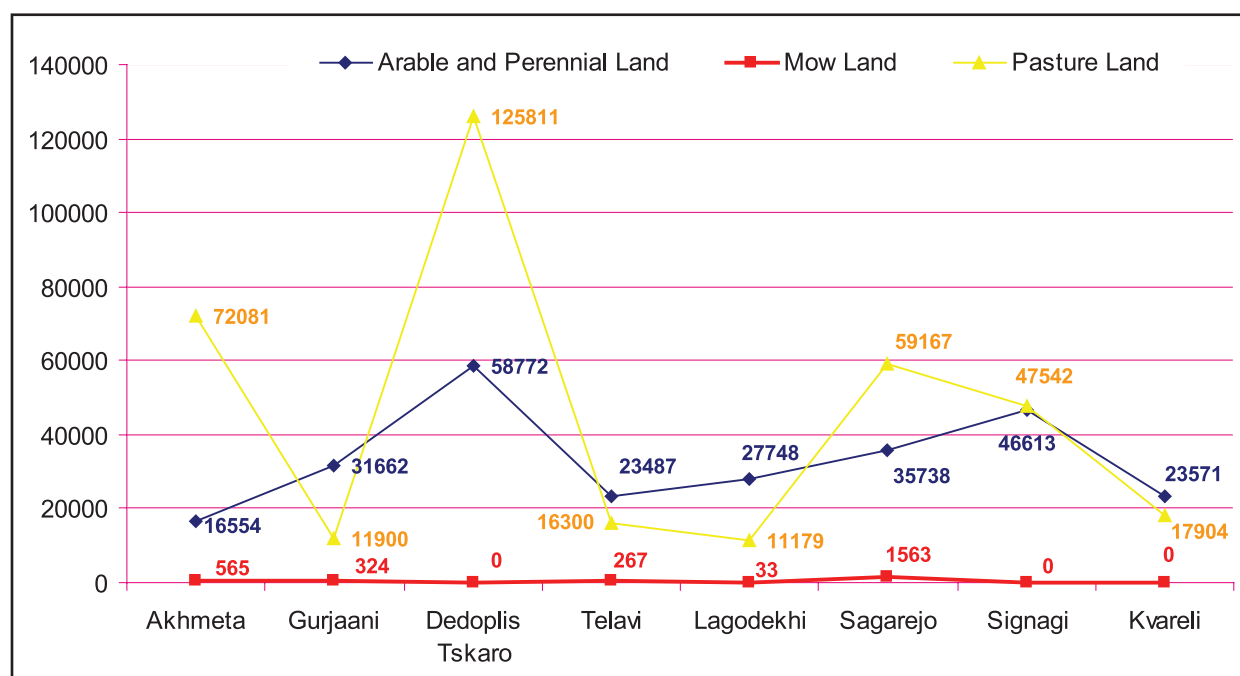
A breakout of agricultural lands in each municipality by major use category is reflected in Figure 2.6. In Dedoplis Tskaro, Akhmeta, and Signagi, most agricultural land is in annual crops or pasture while in Gurjaani and Telavi municipalities, the land is mainly used for perennial crops.

Figure 2.4: Kakheti Land Resources and Population by Municipalities



Source: Ministry of Environment Protection and Natural Resources, 2005

Figure 2.6: Agriculture Land Distribution by Use and Municipalities in Kakheti (ha)



Source: Ministry of Environment Protection and Natural Resources, 2005

In spite of Kakheti's extensive agricultural lands, its farmers are not generally as commercially oriented as several other regions of Georgia (see Table 2.3), 83% of Kakheti's farms produced primarily for on-farm consumption and only

17% were commercially oriented. This compares with Adjara where 43% are essentially commercial farms and Kvemo Kartli with 41% where farms are more heavily oriented to crops such as citrus and vegetables respectively

Table 2.3: Farms Producing Primarily for Self-Use by Region, 2005 (000)

Region	Number of Farms	Producing for Self-consumption	Share %
Adjara AR	50.2	28.7	57%
Guria	37.0	32.7	88%
Imereti	149.6	144.0	96%
Kakheti	118.6	98.5	83%
Mtskheta – Mtianeti	34.0	31.8	93%
Racha - Lechkhumi & Kvemo Svaneti	18.1	17.4	96%
Samegrelo & Zemo Svaneti	105.3	91.3	87%
Samtskhe-Javakheti	46.7	34.1	73%
Kvemo Kartli	96.7	57.4	59%
Shida Kartli	72.9	58.5	80%

Source: Department of Statistics, 2005

Within the region of Kakheti, there also is a wide variance between those municipalities producing primarily for on-farm consumption and those more commercially oriented (see Table 2.4). In Signagi, 63% of farmers are primarily commercially focused while Akhmeta, Sagarejo, Telavi, and Dedoplis Tskaro this falls to only 2-8%.

that in some farm surveys, owners and operators who live in cities rather than on the farms themselves are often missed by the data collection process. Thus, there may be more commercially oriented farms than reflected in the official statistics, especially in a crop such as grapes where urban residents may invest in vineyards.

Table 2.4: Kakheti Farms Producing for Self-Use by Municipalities, 2005 (000)

<i>Municipality</i>	<i>Number of Farms</i>	<i>Producing for Self-consumption</i>	<i>Share %</i>
Akhmeta	11.1	10.8	98%
Gurjaani	22.7	19.1	84%
Dedoplis Tskaro	10.2	9.3	91%
Telavi	20.3	18.7	92%
Lagodekhi	14.5	11.1	76%
Sagarejo	16.9	15.6	92%
Signagi	12.2	4.5	37%
Kvareli	10.7	9.4	87%

Source: Department of Statistics, 2005

Interestingly and counter intuitively, those municipalities which are less focused on higher value grape production tend to have a lower percentage of farms producing for self use. The reasons for this are varied. Signagi is heavily oriented to the production of hay and pastureland which in turn is used for livestock production, the bulk of whose output is generally sold commercially. As for the Lagodekhi municipality with 23% commercial farms, it is famous for its variety of land resources and climatic conditions which allow it to produce a wide variety of agricultural products, some of which must be marketed commercially since only modest volumes can be consumed by any single home.

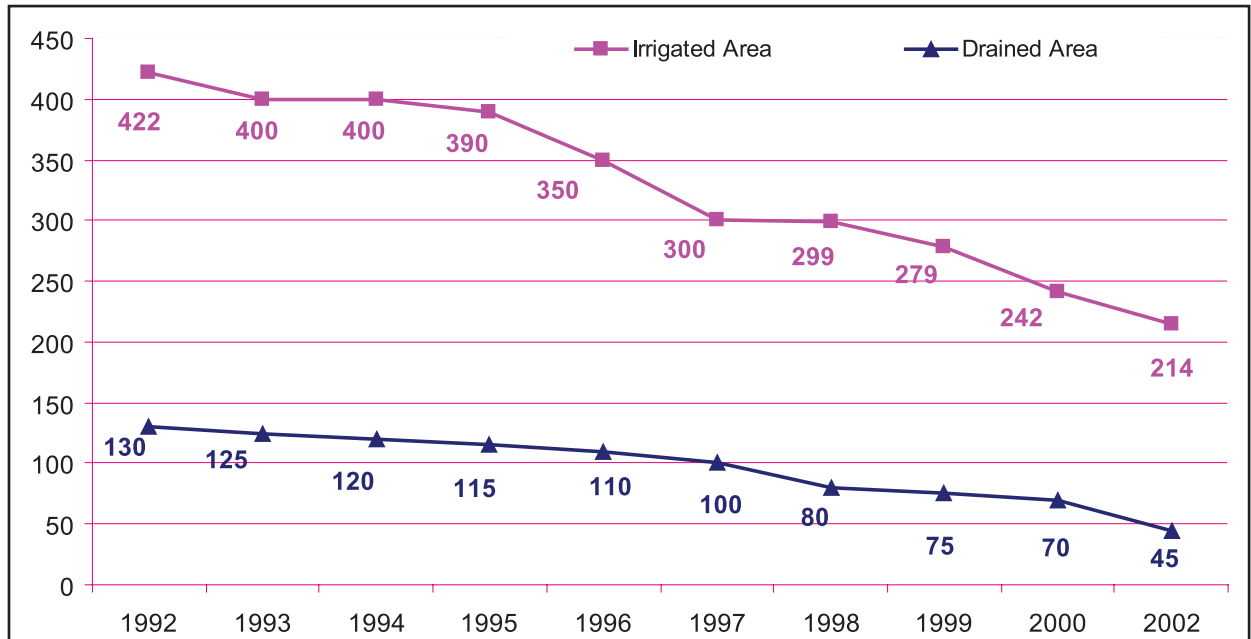
Another low commercialization municipality is Dedoplis Tskaro, which has the highest average farm size and hectares per capita in Kakheti. This is an area that tends to specialize in historically lower value wheat production and has high year-to-year variability in yields. These two factors along with the typically lower levels of technology, irrigation, and capital utilization and the distance from and difficulty of reaching markets has meant that productivity remains low. This, in turn, means that it takes comparatively more land to be able to meet home consumption needs, much less being able to move product to distant markets.

As for the negative correlation of viticulture to commercialization with respect to the degree of market orientation in particular municipality, this might be explained in several ways. First, a large part of the harvest is for self-use and/or is not sold through standard market channels and, thus, may not show up in statistical surveys. Second, the large wineries increasingly have their own production. Thus, while a larger percentage of actual farmed hectareage may be commercial, each winery may represent only one commercial farm in these tables. Finally, in discussions with the Department of Statistics, it was learned

2.3.2 Irrigation

Water management systems were extensively developed in Georgia during the Soviet era with as much as 469,000 hectares irrigated and 163,000 hectares under improved drainage. As seen in Figure 2.7 this had declined to 422,000 and 130,000 hectares respectively by 1992 and continued to decline further until 2002. At that point there were only 214,000 hectares of the irrigation system still functional and only 45,000 hectares being effectively drained.

Figure 2.7: Decreasing Dynamics of Irrigated and Drained Areas in Georgia, 1992 – 2002 (000 ha)

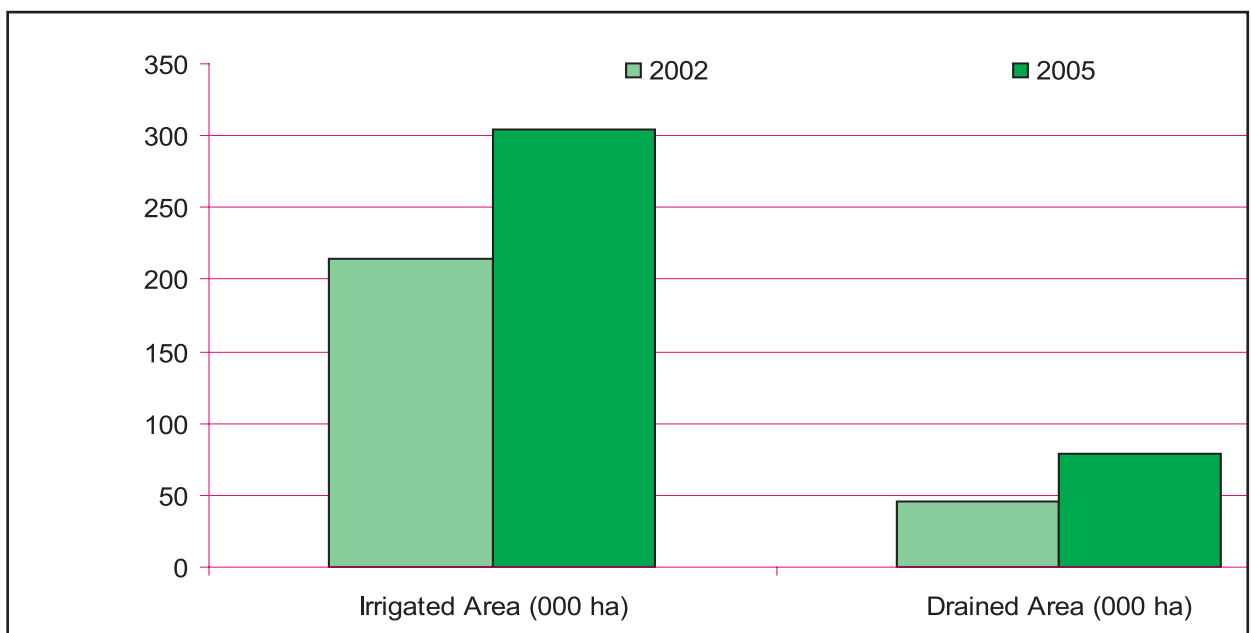


Source: Georgia - Irrigation and Drainage Community Development Project

At this point in time, the government, in partnership with the World Bank, began an initiative to rehabilitate selected components of the national irrigation and drainage system. As seen in Figure 2.8, considerable

success had been achieved in the first three years of the program. Nationally, in 2005, there were just over 300,000 hectares irrigated and over 70,000 hectares being drained.

Figure 2.8: Increasing Dynamics of Irrigated and Drained Areas in Georgia, 2000 – 2005 (000 ha)



Source: Georgia - Irrigation and Drainage Community Development Project

Table 2.9 reflects the total rehabilitation that was planned over a three phase, twelve year program. Essentially 255,000 hectares would receive some sort of rehabilitation and another 90,000 would be part of a program to help form amelioration associations.

In 2005 the government made the decision to attempt to reform the national amelioration system by shifting the

date, both in absolute terms and as a percentage of the total service area. Its over 55,000 hectares of fully or partially improved systems is over 60% of that which has been accomplished to date under the World Bank program.

Table 2.11 reflects estimates of the Internal Economical Profit Norm (essentially the Internal Rate of Return) of the water management rehabilitation initiative. In the primary Kakheti irrigation network of Kvemo Alazani (Gurjaani)

Table 2.9: Rehabilitated Area within the Irrigation and Drainage Community Development Project (ha)

<i>Description</i>	<i>I Phase (5 year)</i>	<i>II Phase (4 year)</i>	<i>III Phase (3 year)</i>	<i>Total (12 year)</i>
Rehabilitation Program	20 000	52 000	53 000	125000
- Irrigation	16 000	36 000	39 000	91 000
- Drainage	4 000	16 000	14 000	34 000
National Program	40 000	50 000	40 000	130 000
Associations Formation Program	50 000	40 000	-	90 000
Total Rehabilitation Area	60 000	102 000	93 000	255 000
Total Rehabilitation/Assoc. Formation	110 000	142 000	93 000	345 000

Source: Irrigation and Drainage Community Development Project

responsibility for ownership and management away from the Ministry of Agriculture to parastatal LTDs under the Ministry of Economy. Table 2.10 reflects the total service area of each LTD as well as the progress that has been made under the World Bank program through 2008.

The Alazani LTD is that functioning in Kakheti. This is the amelioration network that has had the most work to

this has been estimated at 20%. While quite positive, this was the lowest estimate of any of the five systems evaluated.

These projected financial returns were based in part on expected yield increases resulting from crops that could be properly irrigated once a system (or portion of a system) was rehabilitated (see Table 2.12). Percent increases ranged

Table 2.10: Service Area and Progress by Amelioration LTD (ha)

<i>LTD</i>	<i>Total Service Area</i>	<i>Fully Rehabilitated</i>	<i>Partially Improved</i>	<i>Rehabilitated Association Areas</i>	<i>Total</i>
Alazani	60,200	8,692	46,500	1,416	55,608
Mtkvari	128,850	7,881	0	3,157	11,038
Sioni	98,000	0	6,000	3,302	9,302
Kolkheti	120,000	4,177	16,000	1,404	21,581
Total	407,050	20,650	68,500	9,277	97,529

Source: Irrigation and Drainage Community Development Project

Table 2.11: Economic Outcome from the Irrigation and Drainage Community Development Project

<i>Description</i>	<i>Internal Economical Profit Norm (%)</i>
Tashiskari (Khashuri and Kareli)	35
Kvemo Alazani (Gurjaani)	20
Meskheta (Akhaltzikhe)	61
Sioni - Choloki (Lanchkhuti)	36
Sioni - Khobi (Khobi)	39

Source: Irrigation and Drainage Community Development Project

from 58% for grapes to as high as 150% for sunflowers. In some producing areas and crops, these are actually felt to be conservative estimates of the benefits from irrigation.

While the government-World Bank amelioration program has made significant progress in Kakheti, there are still major challenges associated with (1) paying for the ongoing maintenance of the system to prevent it from deteriorating once again, and (2) the oversight and management of equitable water distribution through the system. A number of concerns have been raised by farmers in Kakheti related to this latter consideration. These include:

- Farmers are required to pay for water in advance of when it is received. Thus, farmers who are undercapitalized may not be able irrigate their crops (at least legally) due to a lack of funds to pay the required water charge. This, then, can result in the following two problems.

- Those managing the system may not release water down a secondary or tertiary canal unless all farmers along that canal are able to pay the water charge in advance. Since many cannot, those who can are still unable to irrigate their crops.
- Even when those who manage the system do release water into a canal when all farmers have not paid, downstream farmers may fail to receive the water they have paid for because up-canal farmers who have not paid are illegally diverting water before it can reach those who have paid.

If the full benefits of the amelioration rehabilitation programs are to be realized, then these and other similar issues must be effectively addressed.

One final observation with respect to irrigation is necessary. While all government and donor focus to date has tended to be on the rehabilitation of the massive irrigation systems

Table 2.12: Kvemo Alazani Area Productivity by the Main Agricultural Crops (t/ha)

<i>Description</i>	<i>Before Rehabilitation</i>	<i>After Rehabilitation</i>	<i>Growth %</i>
Wheat	1.9	3.5	84%
Corn	2.0	4.0	100%
Sunflower	0.6	1.5	150%
Grape	3.8	6.0	58%
Melon	20.0	35.0	75%
Vegetable	7.0	16.0	129%

Source: Irrigation and Drainage Community Development Project

built during Soviet times, there is the potential for individual farms to irrigate profitably from much smaller on-site systems using wells and/or tapping surface water sources like rivers, lakes, and springs. While these options become less attractive with higher energy costs, they should not be overlooked. Additionally, if three phase electrical power is in place or can be developed in an area, these systems can often run efficiently on electricity. It is felt that Kakheti has a number of locations where these systems will be viable. In fact, currently there are some farmers already tapping rivers, such as the Alazani, on their own to irrigate their crops.

economical irrigation systems. These latter two factors limit the possibilities for alternative and/or more profitable crops in many production areas. In those areas where reliable, economical irrigation is available, farmers have often moved away from the lower value cereals, grains, and oilseeds to more profitable crops such as melons and vegetables. Yet vast expanses of Kakheti do not have access to public infrastructure irrigation systems or economical alternatives for tapping ground and other surface (non-gravity) water resources. These areas find dry-land cereals, grains, and oilseeds as their primary production alternatives.

Table 2.13: Wheat Production by Region, 1999-2007 (000 t)

Georgian and Kakhetian Wheat Production									
Description	1999	2000	2001	2002	2003	2004	2005	2006	2007
Georgia	226	89	307	200	225	186	190	70	75
Kakheti	93	43	193	84	105	87	97	43	62
Kakheti share	41%	48%	63%	42%	47%	47%	51%	61%	83%

Source: Department of Statistics, 2007

2.4 Crop Production

2.4.1 Cereals, Grains, and Oilseeds

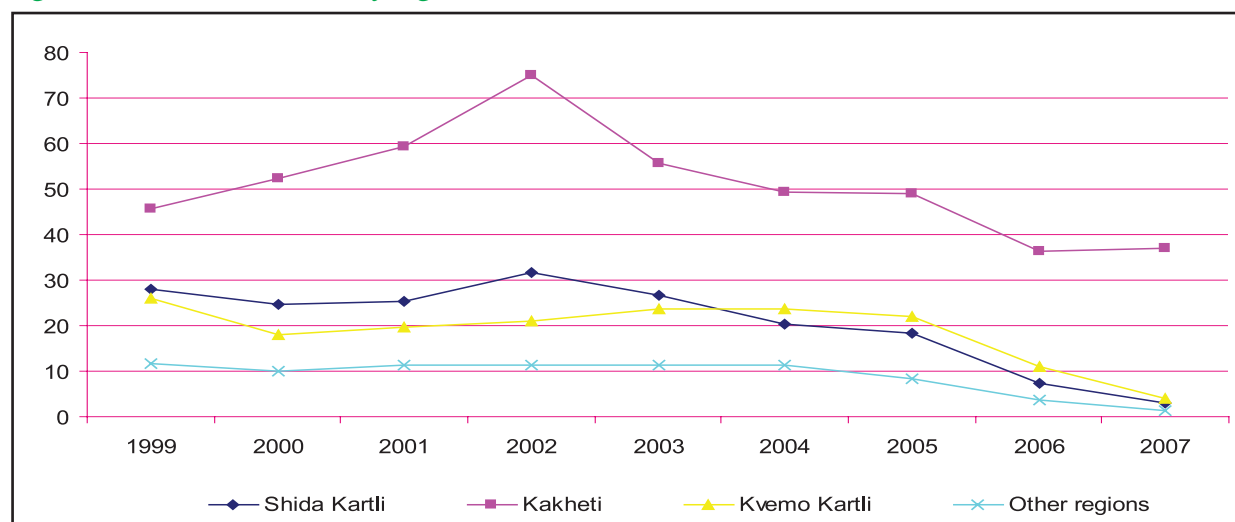
Kakheti is one of the traditional regions in Georgia producing field crops (cereals, grains, and oilseeds). Production patterns within the region are defined by suitable land types (soils, slope, drainage), the nature of local rainfall patterns and climate, and the availability of

The remainder of this section will individually address four primary field crops grown in the region: wheat, barley, corn, and sunflowers.

2.4.1.1 Wheat

Historically, Georgia is a wheat producing country with Kakheti being the major growing region. Table 2.13 and Figures 2.9 and 2.10 reflect national trends since 1999. In

Figure 2.9: Wheat Planted Area by Region 1999-2007 (000 ha)

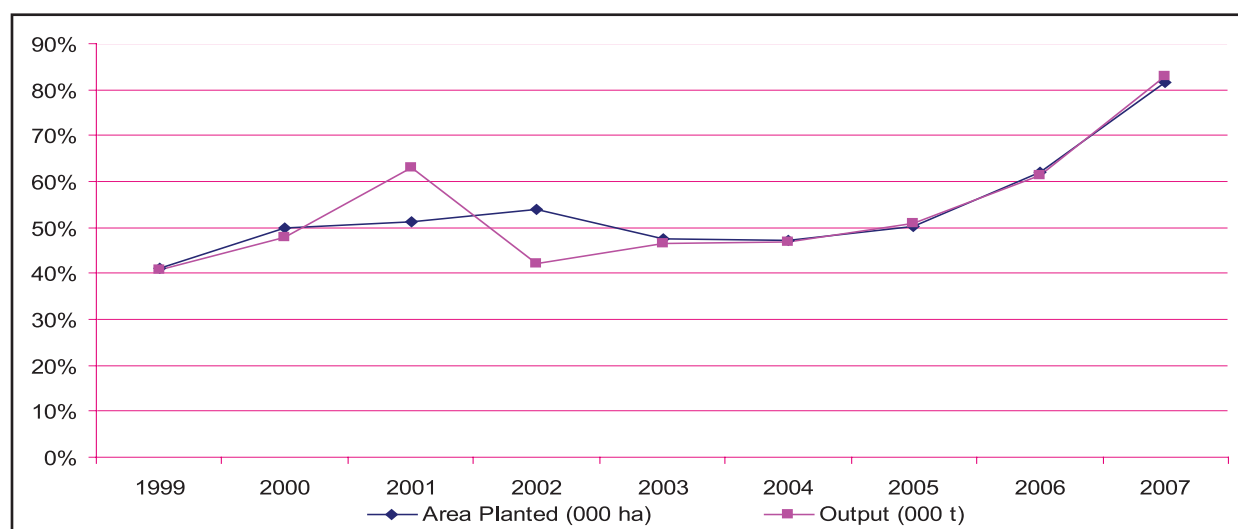


Source: Department of Statistics, 2007

the period 1999-2007, 41-83% (or just over half on average) of all the wheat produced in Georgia came from this region. However, Kakheti's share of national wheat hectareage and production been rising dramatically in the past several years. While Kakheti's absolute numbers have been declining since the 2001-3 period, due to even greater proportionate declines in other regions of Georgia, Kakheti now has $\pm 80\%$ of the national totals for wheat hectareage and production.

The wheat market in Georgia is not segmented by varieties or breeds per se. Nonetheless, there are a range of uses that may be somewhat more compatible with a particular wheat type. Wheat for flour, primarily for bread, is by far the primary demand category in the country. While wheat production for confectionary, paste, and yeast is not specified in the markets, in reality, lower quality wheat is used for yeast; bread flour is used in confections; and

Figure 2.10: Proportions of Georgian Wheat Production in Kakheti, 1999-2007



Source: Department of Statistics, 2007

Within the region, Dedoplis Tskaro is the major wheat producing municipality with 15-25% of regional production with Signagi being a distant second with less than half this volume in some years (see Table 2.14). As reflected in Figure 2.11, this relationship of production in each municipality tends to mirror that for hectares planted.

there is significant demand for high adhesive wheat (22-28% adhesiveness). Three of the primary wheat varieties (domestic and imported) are Upkho 1, Spartanka and Copper although there are others as well.

In spite of Georgia's long history of wheat production, two unavoidable facts remain. First, even in its best production

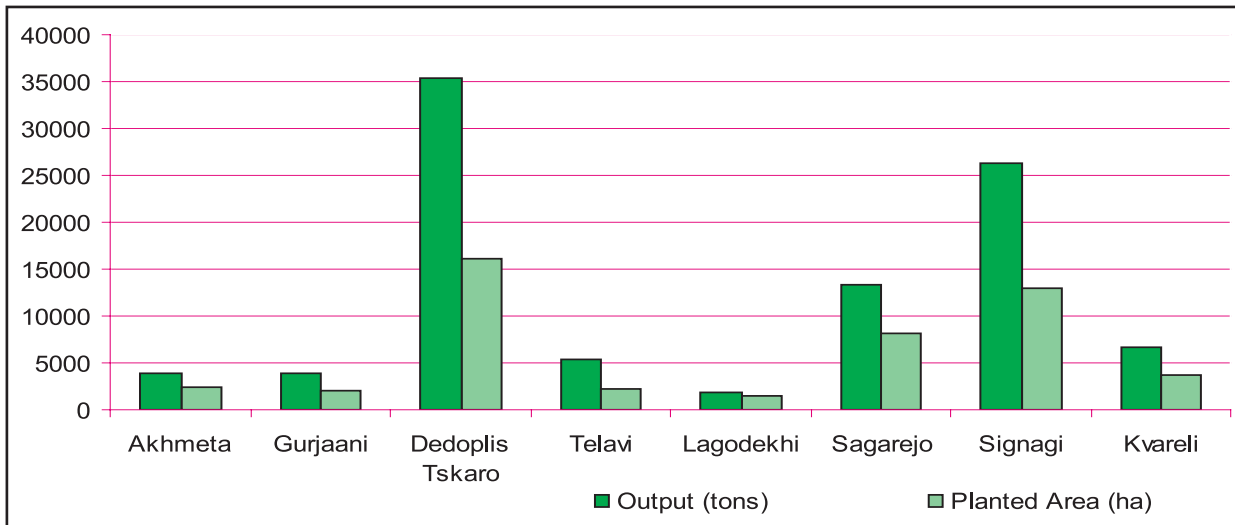
Table 2.14: Wheat Production by Municipalities, 2001-2005 (tons)

Wheat Production by Municipalities					
Description	2001	2002	2003	2004	2005
Akhmeta	17 180	11 415	12 650	8 600	3 840
Gurjaani	13 268	7 000	5 720	6 750	3 900
Dedoplis Tskaro	68 850	14 430	40 000	31 544	35 354
Telavi	13 668	11 800	4 216	5 600	5 300
Lagodekhi	6 754	2 875	2 847	2 210	1 918
Sagarejo	15 813	6 300	10 100	8 365	13 389
Signagi	29 680	22 000	18 500	18 000	26 260
Kvareli	28 000	8 235	11 000	6 207	6 655

Source: Department of Statistics, 2005

Georgia allowing them to move product into the country at

Figure 2.11: Wheat Hectarage and Production in Kakheti, 2005



Source: Department of Statistics, 2005

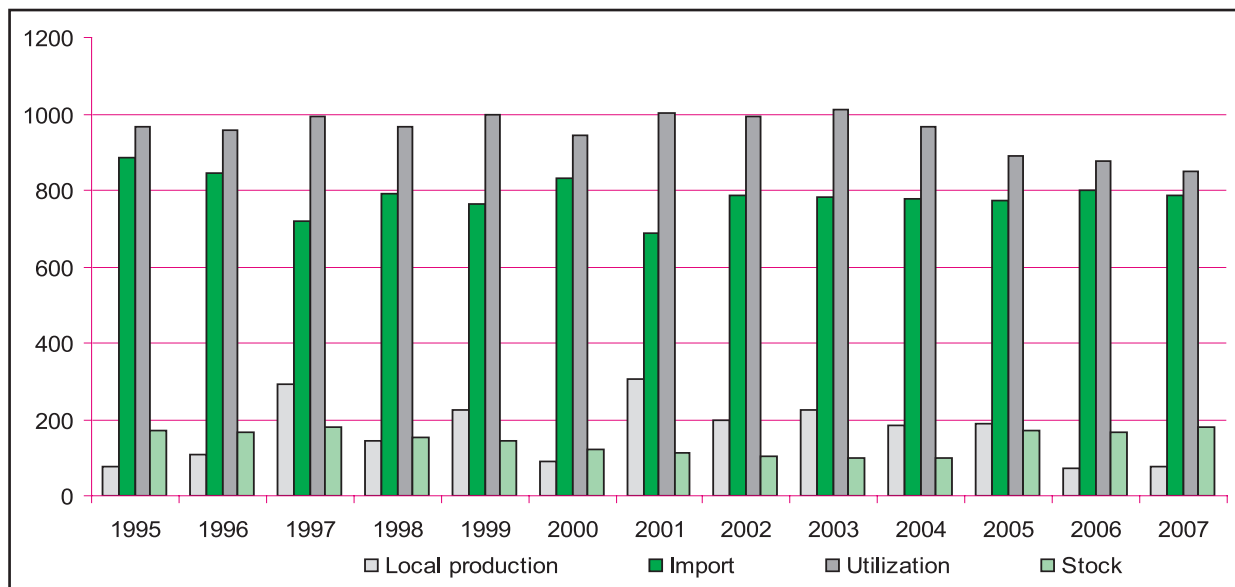
pricing levels which typically depress domestic production prices which, in turn, dampens the production appeal of wheat unless other options do not exist.

Second, on a moving average basis, domestic wheat production has been declining since 2001. In fact, 2007 production is only 25% of that in 2001, a staggering 75% decline in output (see Table 2.13). While some of this difference may reflect changes in the survey methodology begun in 2006, there is no denying the significant decline in hectarage and production. Yet, as striking as these numbers

are, since independence, Georgia's wheat production seems to move in cycles with low points in 1995 and 2000 similar to the one experienced in 2006 and a high point in 1997 similar to 2001. Since Kakheti tends to produce about half of Georgia's wheat on the average, its production cycles tend to mirror (in fact drive) those of the country as a whole.

The low production levels of 1995 are understandable due to the dislocations associated with independence and all that followed. As the national economy began recovering about that time, it seemed the domestic wheat industry was

Figure 2.12: Georgia Wheat Balance: 1995-2007 (000 t)



Source: Department of Statistics, 2007

also beginning to recover. Yet, for a range of reasons, past growth trends have not been sustainable.

Part of this had to do with the deterioration in the national irrigation system which meant that less wheat land could be irrigated. Thus, yields are now far more dependent on weather than they would have been previously. Nonetheless, since 2001 with the World Bank supported irrigation rehabilitation programs, irrigated hectareage has at least stabilized if not actually having increased, especially in Kakheti.

Table 2.15: Georgian Wheat Yields 1999-2007 (t/ha)

<i>Georgian Wheat Yields</i>										
<i>Description</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>Average</i>
Georgia	2.0	1.0	2.7	1.7	1.9	1.8	2.0	1.2	1.7	1.78
Shida Kartli	2.1	1.4	2.0	2.0	2.2	1.8	1.9	1.2	1.6	1.80
Kakheti	2.0	0.9	3.3	1.4	1.9	1.8	2.0	1.2	1.7	1.80
Kvemo Kartli	2.0	1.0	2.0	1.8	2.0	1.9	2.0	1.3	1.4	1.71
Other regions	1.9	0.9	2.2	1.9	1.4	1.6	2.2	1.3	1.8	1.69

Source: Department of Statistics, 2007

Georgia's farm machinery stock has also continued to age and deteriorate in spite of government efforts to provide new tractors, combines, and other equipment through a range of programs. Thus, farmers may slowly be becoming less efficient in their production techniques. For example, aging combines leave far too much of the crop in the field. One estimate is that, given their current condition, these older combines can leave approximately 30% of the crop in the field. Another factor affecting recent yields may be rising energy prices which have significantly increased

the costs of fertilizers and fuel to run equipment. In the absence of an effective farm credit system, all these could adversely affect both yields and the amount of hectareage planted even with the higher world wheat prices found in recent years.

With respect to yields both in Georgia and Kakheti, Table 2.15 shows both the variability typical in the country as well as the relatively low production levels on average. While the world average for wheat production is approximately 2.8 tons per hectare, yields for Kakheti are just over 1.8 tons

and for the remainder of Georgia, just under 1.7 tons. Yield variability between years is major and seems to be even greater in Kakheti than in several other regions. For instance in 2001, average yields in Kakheti were 3.3 tons; the following year, 1.4 tons, a nearly 60% decrease. For the remainder of Georgia, the greatest year-to-year variability is only 50% (2.0 tons in 1999 vs. 1.0 tons in 2000). Such variability in Kakhetian yields can make it highly unattractive to produce wheat or invest in technology or production inputs when alternatives exist or when money is short.

Table 2.16: Average Wheat Yields by Municipalities 2004-2005 (t/ha)

<i>Average Wheat Yields by Municipalities</i>	
Akhmeta	1.80
Gurjaani	1.75
Dedoplis Tskaro	2.00
Telavi	2.15
Lagodekhi	1.55
Sagarejo	1.55
Signagi	2.00
Kvareli	1.80

Source: Department of Statistics, 2005

Table 2.16 reflects average wheat yields across the various municipalities of Kakheti for a two year period. There are obviously major differences across the region with the most productive municipalities (D/Tskaro and Signagi at 2.0 tons) having 30% higher yields than the least productive (Lagodekhi and Sagarejo at 1.55 tons). This reflects both the suitability of one production area over another (rainfall, hail, soils, drainage) as well as some differences in the availability and use of technology and production inputs. Also, in some municipalities, the best land goes to fruits and vegetables.

What is somewhat promising, even with the challenges faced by Kakhetian farmers, yields significantly greater than 2 tons per hectare are already being achieved. In fact, while not reflected in this table, in 2001 in Dedoplis Tskaro, yields were 4 tons per hectare. With better equipment, seed, and other inputs plus expanded irrigation in selected areas, yields in Kakheti might well be able to exceed the world average.

In the event this were to occur, the average wheat farmer in Kakheti could increase yields by one ton per hectare. Given recent world prices, this could increase farm revenues per hectare by over US\$400. Since Kakheti produces wheat on 35,000-75,000 hectares depending on the year, this could mean an increase in farm gross revenues of US\$14-30 million annually. Even at US\$300 per ton, this would increase farm revenues in the region by US\$10-22 million. Thus, such yield increases could on average provide as much as an additional US\$200-250 for each farm in the region.

It is these higher world prices that may finally be the stimulus for increased interest and investment in Georgian (and, therefore, Kakhetian) wheat production. Even if these prices are not sustained indefinitely (which they will not be as farmers in countries in addition to Georgia respond to this incentive to expand production), if enough progress can be made during the next several years to move Georgian production to a more competitive footing, then at least some portion of Georgian production will likely be able to compete with imported wheat. If that occurs, even though world prices may fall to more historic levels, Georgia's equilibrium level for domestic wheat production should be at a higher level than experienced over the past two decades. While there are a variety of factors which could result in a somewhat different outcome, within Kakheti, Dedoplis Tskaro and Signagi are the two municipalities which should benefit the most.

Regardless of whether wheat stays at its current levels or eventually expands, there is felt to be the potential for the

production of additional certified wheat seed beyond that now available from Georgian sources. Within Kakheti, there is presently one certified seed operation of some size. However, this enterprise is not currently meeting the total national demand. For example, in the fall of 2008 in the conflict areas around Gori, MCG ADA undertook a major program to assist local farmers plant their winter wheat crop. This initiative was unable to find adequate quality seed in Georgia for the targeted 12,000 hectares and was forced to import wheat seed from Turkey. This would seem to indicate the potential for additional production which might also produce quality seed for other crops as well. At one time the Ministry of Agriculture had USDA Wheat Monetization funds available to assist qualified farmers who wished to undertake such an enterprise. Such support may still be available.

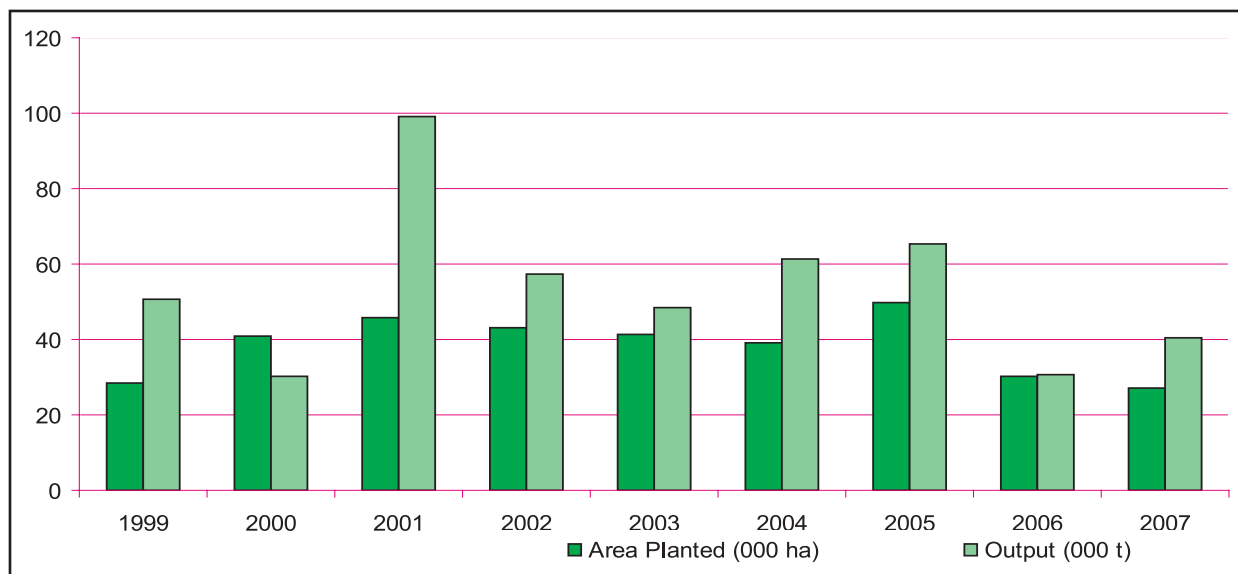
2.4.1.2 Barley

Barley is Georgia's second most important cereal crop and is used primarily to feed cattle. As a consequence, annual production is generally defined by what is happening in the cattle industry, i.e., its expansions, contractions, and profitability. Although Georgia has a rapidly growing beer industry, the country does not currently produce malting barley and, therefore, imports all its needs for this use. The reason for this may be that within Georgia, beer production on a large scale commercial basis is a rather recent phenomenon. Thus, there has not been a historic demand for malting barley sufficient to incentivize the development of varieties and production technologies appropriate to Georgia. That may be changing, and there is now a realizable potential for and an increased interest in domestic malting barley production provided farmers can achieve the consistent quality required by brewers.

Figure 2.13 reflects Georgian barley production from 1999 through 2007. Production has varied widely over this period from a low in 2000 of roughly 30,000 tons to a high in 2001 of nearly 100,000 tons, then back down to only 26,000 tons in 2006. The hectareage planted to barley has tended to fluctuate much more narrowly, basically in the 30,000-50,000 range.

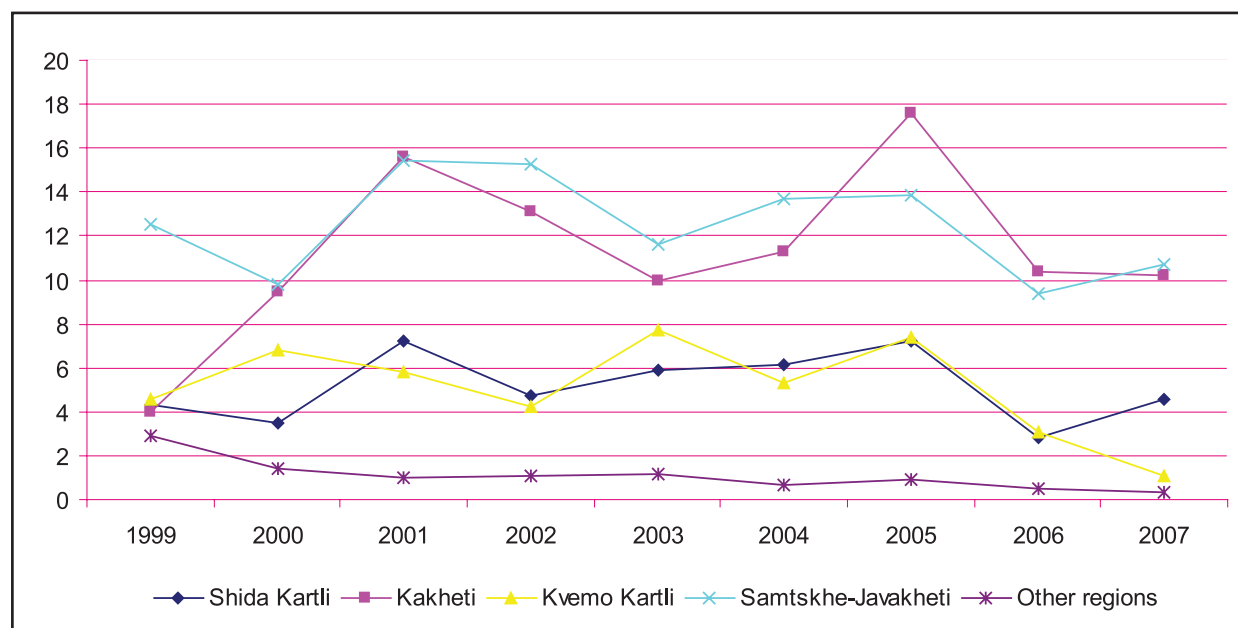
Figure 2.14 presents hectareage planted to barley by region within Georgia. Historically, Samtskhe-Javakheti has been the major production region by area planted. However, since 2001, even though Kakheti shows a greater year-to-year variability, the two regions now produce on approximately the same hectareage in peak years.

Figure 2.13: Barley Production in Georgia: Area Planted and Output, 1999-2007



Source: Department of Statistics, 2007

Figure 2.14: Barley Production by Region, 1999-2007 (000 ha)



Source: Department of Statistics, 2007

Although on average, Kakheti produces on perhaps 1,100 fewer hectares than Samtskhe-Javakheti, due to typically higher yields in the former, Kakheti is now the major barley producing region in Georgia with 30-40% of the nation's output each year. This is up from only 14% in 1999 (see Table 2.17)

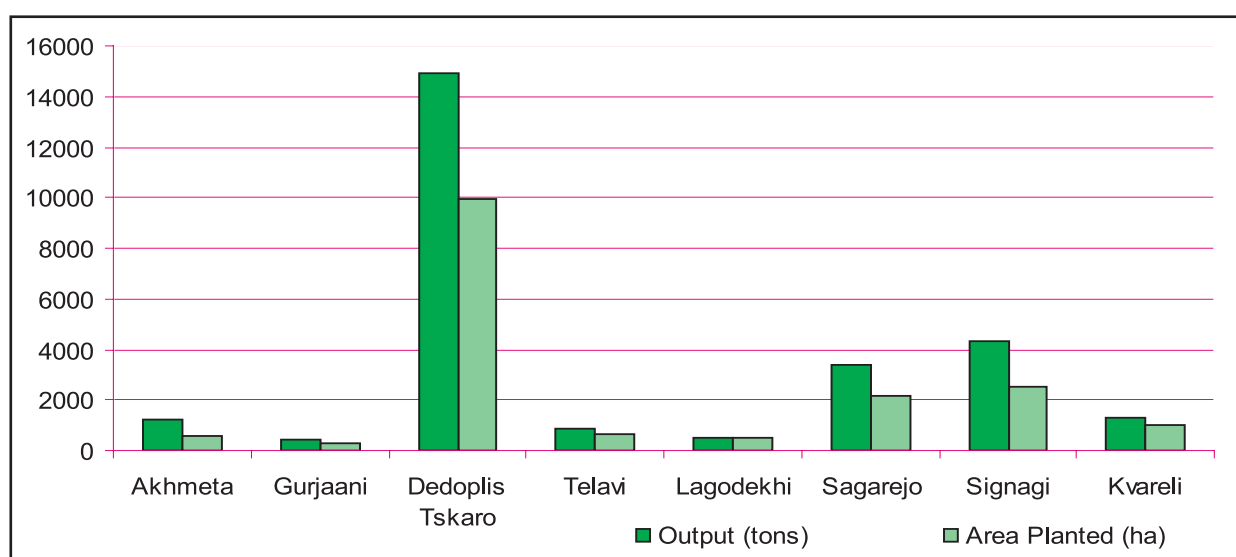
Within Kakheti, Dedoplistskaro is by far the dominant producing municipality with just under 60% of both hectarage and output in 2005 (see Figure 2.15). It is followed by the municipalities of Signagi and Sagarejo, which produce 30% or less than Dedoplistskaro. Production in Kakheti's other five municipalities is negligible.

Table 2.17: Kakheti Share of Georgian Barley Production, 1999-2007 (000 t)

Georgian Barley Production									
Description	1999	2000	2001	2002	2003	2004	2005	2006	2007
Kakheti share	14%	20%	39%	24%	30%	30%	41%	41%	30%

Source: Department of Statistics, 2007

Figure 2.15: Barley Production within Kakheti: Area Planted and Output, 2005



Source: Department of Statistics, 2005

Barley yields in Kakheti tend to be highly volatile. During the 1999-2007 period, they have been as low as 0.6 tons to as high as 2.5 tons per hectare. On the average Kakheti's yields of 1.41 tons per hectare is slightly below the national average of 1.51 tons and that of the most productive region, Samtskhe-Javakheti, at 1.62 tons. Unfortunately, in the most recent two reporting years,

they have fallen to 1.2 tons per hectare in the region and only slightly higher than that for the country as a whole. Those same factors which have plagued wheat production have also affected barley—less than ideal growing conditions, lack of irrigation, high fertilizer and fuel prices, risks associated with the crop, and absence of an effective agricultural credit system.

Table 2.18: Barley Yields, 1999-2007 (t/ha)

Barley Yields (t/ha)										
Description	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Georgia	1.8	1.0	2.2	1.5	1.3	1.7	1.4	1.2	1.5	1.51
Kakheti	1.7	0.6	2.5	1.0	1.4	1.6	1.5	1.2	1.2	1.41
Shida Kartli	1.8	1.3	1.9	1.6	1.3	1.6	1.2	1.1	1.3	1.46
Kvemo Kartli	1.5	0.9	1.8	1.5	1.6	1.5	1.0	1.4	2.0	1.47
Samtskhe-Javakheti	2.0	1.2	2.2	1.9	1.1	1.7	1.6	1.1	1.8	1.62
Other regions	1.6	1.1	2.1	1.6	1.3	1.7	1.5	1.2	0.7	1.42

Source: Department of Statistics, 2007

Table 2.19: Average Barely Yields by Municipalities, 2004-2005 (t/ha)

<i>Average Barely Yields by Municipalities</i>	
Akhmeta	1.95
Gurjaani	1.35
Dedoplis Tskaro	1.60
Telavi	1.55
Lagodekhi	1.25
Sagarejo	1.50
Signagi	1.75
Kvareli	1.45

Source: Department of Statistics, 2005

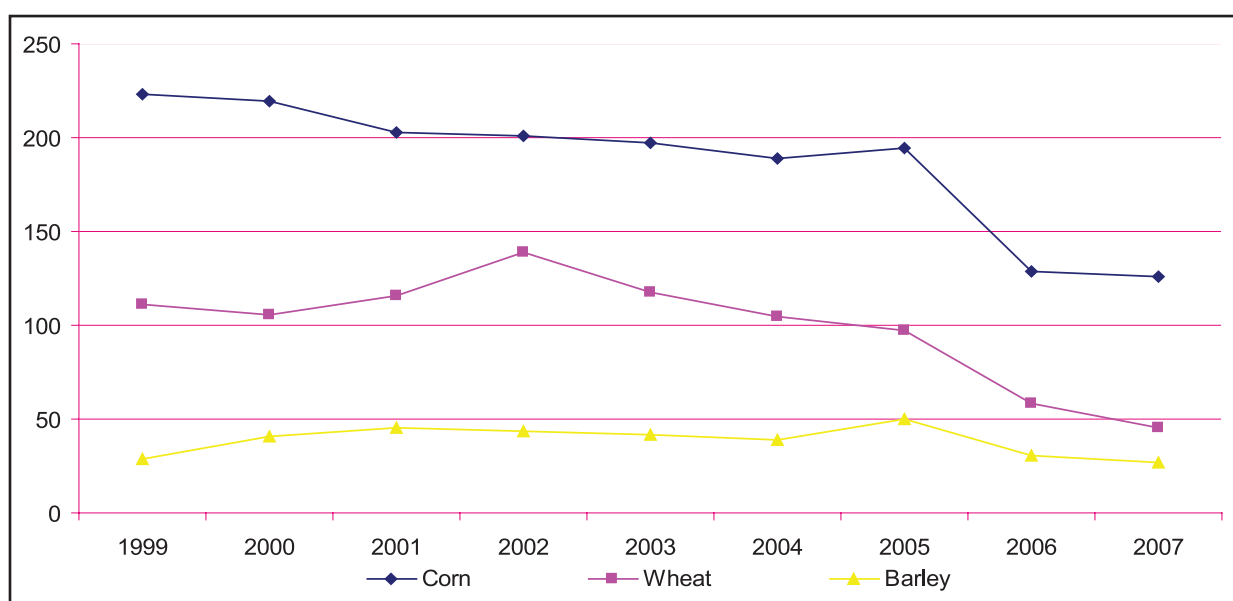
Table 2.19 reflects yields between municipalities in Kakheti. During the 2004-5 period, Akhmeta was the most productive region at 1.95 tons per hectare followed by Signagi at 1.75 tons and Dedoplis Tskaro at 1.60.

As with wheat in Kakheti, while these yields tend to be below world averages, there is promise to be found in Georgia. Although yields in the country in recent years have fallen below 1 ton per hectare, the region and country as a whole achieved yields in 2001 which greatly exceeded 2 tons per hectare. Additionally, during a four year period, the

Dedoplis Tskaro municipality was able to average roughly 2 tons per hectare. This was all without the benefit of any significant irrigation, modern production techniques, quality seed, or optimal input levels. Thus, it is felt there is a reasonable opportunity within the region to bring average yields up to (if not actually exceeding) 2 tons per hectare for the average year.

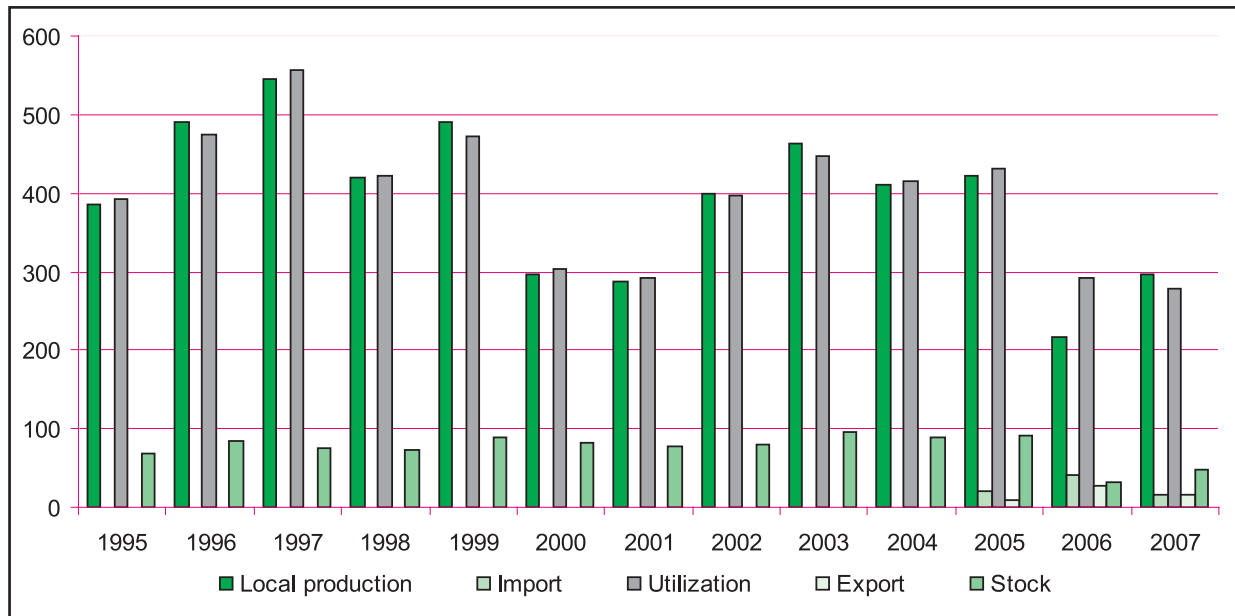
From a demand standpoint, there are two promising developments. The first is that referenced earlier in this section, the opportunity to begin producing malting barley

Figure 2.16: Area Planted to Grains, 1999-2007 (000 ha)



Source: Department of Statistics, 2007

Figure 2.17: Corn Product Balance, 1999-2007 (000 t)



Source: Department of Statistics, 2007

for the expanding domestic beer industry. The second relates to cattle. Until 2006 Georgia's cattle numbers and those in Kakheti have been increasing steadily. Additionally, there are a number of donor projects which are focusing on increasing cattle productivity (both dairy and meat). All these factors should eventually translate into a higher demand for barley for feed.

Traditionally Georgia cannot compete in world markets with U.S., Canadian, and Ukrainian barley production. However, given transportation cost advantages, rising world prices, and improved production technologies and inputs, if investment capital (both short and longer term) is available, then there may be real potential to increase domestic production in order to meet the new demand opportunities which are developing within Georgia itself.

2.4.1.3 Corn

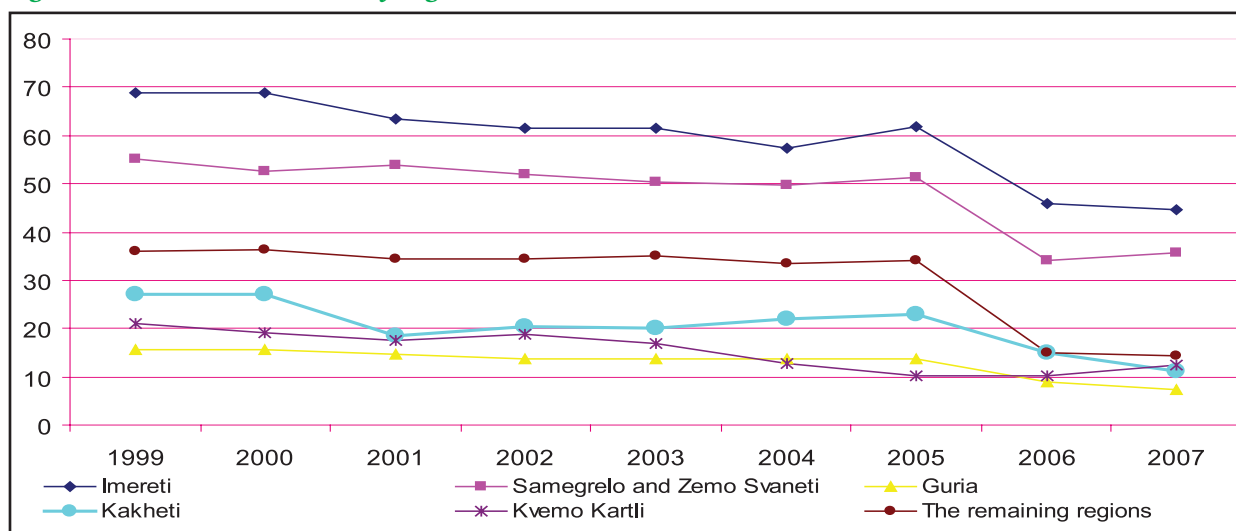
Corn is the most common grain crop grown in Georgia as a whole. In fact on an annual basis, 70,000-100,000 more hectares of corn are grown within the country than even wheat (see Figure 2.16). Part of corn's popularity relates to its demand versatility. It is consumed as a food, fed to cattle, and widely processed as a feed and for other purposes. Even with significant domestic production, in recent years Georgia has had to import corn, primarily from Ukraine (see Figure 2.17). Finished feeds, to include pelletized feed for fish, which can include high corn content, are also imported from Turkey. There is some export of corn

and corn products, e.g., in the form of finished feeds, to the Armenian poultry industry, but Georgia has been a net importer since 2005 even though the amount is not especially large compared with overall utilization.

During Soviet times, corn was produced both for grain and as silage for direct feeding to livestock, especially over the winter months. Today it is essentially only produced for its value and use as a grain. Nonetheless, with the increased potential for and interest in cattle production for both beef and dairy, there is increased interest in corn as a silage crop. At this time, neither the varieties nor production technologies are in place for viable silage production. However, the SIDA GRM dairy project is experimenting successfully with urea enhanced silage.

Historically, the western half of Georgia concentrated on corn as its primary grain and the east on wheat. For that reason still, the primary corn producing regions in Georgia are Imereti and Samegrelo (see Figure 2.18). Nonetheless, corn is still an important crop in Kakheti with just over or under 20,000 hectares being planted each year (vs. an average of 50,000 for wheat and 15,000 for barley). Kakheti's share of national production, however, tends to vary widely from as little as 7% in 2006 to over 20% in 2001. Normally, Kakhetian corn production on an annual basis tends to be in the 50,000-60,000 ton range until the most recent two years (2006-7) when it was only 15-25,000 tons (see Table 2.20). It is not clear whether this

Figure 2.18: Corn, Planted Area by Region 1999-2007 (000 ha)



Source: Department of Statistics, 2007

Table 2.20: Georgian and Kakhetian Corn Production, 1999-2007 (000 t)

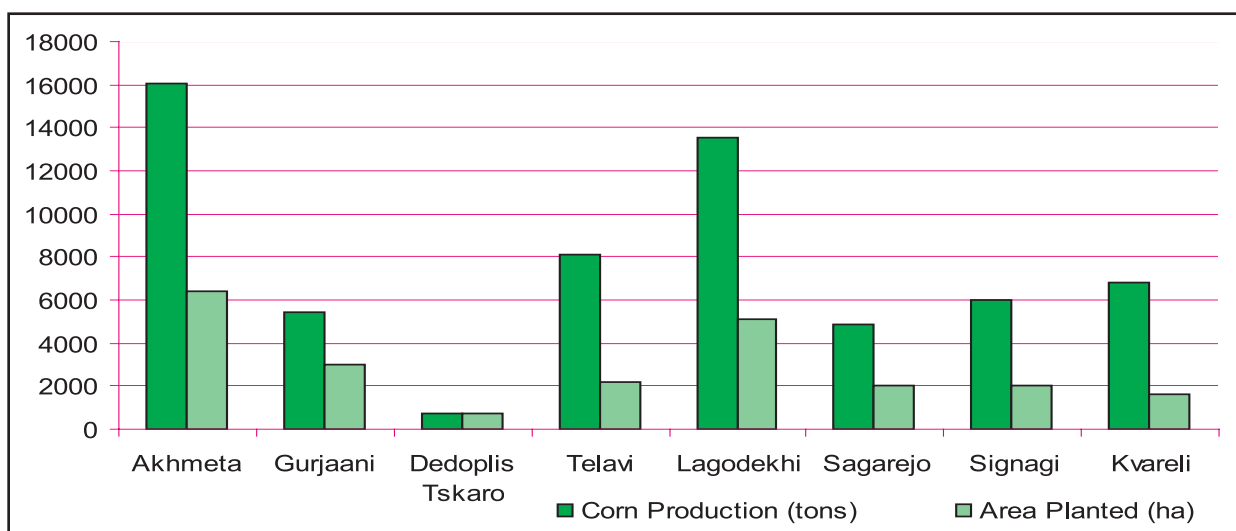
Corn Production		1999	2000	2001	2002	2003	2004	2005	2006	2007
Description										
Georgia		490.5	295.9	288.6	400.1	461.9	410.6	421.3	217.4	295.8
Kakheti		81.2	12.6	58.3	53	38.4	62.2	61.6	14.8	23.5
Kakheti Share		17%	4%	20%	13%	8%	15%	15%	7%	8%

Source: Department of Statistics, 2007

is a statistical anomaly associated with the change in data collection begun with the 2006 crop season or whether this truly is Kakheti's current production level.

To produce corn profitably in Kakheti generally requires irrigation. Thus, corn production in the region tends to be concentrated in those areas where irrigation is available

Figure 2.19: Corn Production and Area Planted by Municipalities, 2005



Source: Department of Statistics, 2005

and/or the climate is comparatively moister. These result in over half of Kakhetian corn production being concentrated in two municipalities, Akhmeta and Lagodekhi (see Figure 2.19). Other important municipalities include, in order of importance, Telavi, Kvareli, and Signagi.

Corn yields tend to vary widely between years in Georgia but average roughly 2.1 tons per hectare, which is only 20-30% of those typically found in major Western producing nations. Within Kakheti, however, just as with wheat, yields are higher than the national average in most years and over time (just over 2.3 tons per hectare). On the average, corn yields in Kakheti are more than 15% greater than in the remainder of Georgia. However, annual variability is far greater in Kakheti. (See Table 2.21)

Within Kakheti, yields by municipalities vary considerably from 2.07 tons per hectare in Sagarejo to 4.11 tons in

Telavi during the 2004-5 crop seasons (see Table 2.22). Even the region's least productive municipalities produce at or above the national level and Telavi produces at nearly twice the national average. As with both wheat and barley, these significantly higher yields in Telavi hold promise that average corn yields within the region may be able to be increased significantly, possibly even doubled, with the right types and applications of production inputs to include irrigation.

2.4.1.4 Sunflowers

For all practical purposes, sunflowers are a Kakhetian rather than a national crop. Until 2005, over 92% of all Georgian production came from this region (see 2.23). Even in 2006, when production conditions in Kakheti were not ideal, nearly 70% of national production still came from this region. In 2007, this had increased back

Table 2.21: Georgian Corn Yields 1999-2007 (t/ha)

Georgian Corn Yields										
Description	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Georgia	2.2	1.6	1.6	2.1	2.4	2.2	2.2	1.8	2.4	2.06
Imereti	2	1.3	0.6	2.2	2.3	2.2	2.1	1.4	2	1.79
Samegrelo and Zemo Svaneti	2.3	2.3	1.3	1.3	2.6	1.9	2.1	2.3	2.4	2.06
Guria	1.7	2.1	1.6	1.1	2.8	1.6	2	3	4.7	2.29
Kakheti	3	0.7	3.3	2.7	2.2	2.9	2.7	1.3	2.2	2.33
Kvemo Kartli	2.2	1.4	2.4	2.8	2.5	2.5	2.4	2.3	3.2	2.41
The remaining regions	2.2	1.4	2.2	2.5	2.4	2.4	2.2	1.5	2.2	2.11

Source: Department of Statistics, 2007

Table 2.22: Average Corn Yields by Municipalities, 2004-2005 (t/ha)

Average Corn Yields	
Akhmeta	2.35
Gurjaani	2.60
Dedoplis Tskaro	2.10
Telavi	4.11
Lagodekhi	2.85
Sagarejo	2.07
Signagi	2.94
Kvareli	3.42

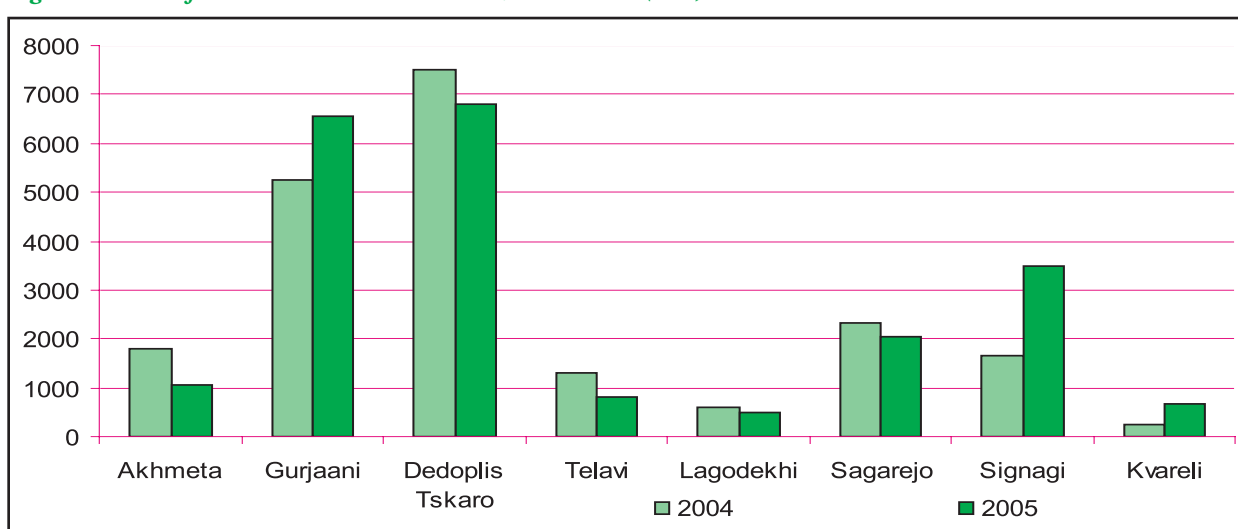
Source: Department of Statistics, 2005

Table 2.23: Georgian Sunflower Production, 2001-2007 (000 t)

<i>Georgian Sunflower Production</i>							
<i>Description</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>
Georgia	41.8	21.2	25.5	22.3	22.3	12.3	16.1
Kakheti	41.7	19.7	24.1	20.7	21.9	8.3	12.4
Kakheti Share	99.76%	92.92%	94.51%	92.83%	98.21%	67.48%	77.02%

Source: Department of Statistics, 2007

Figure 2.20: Sunflower Production in Kakheti, 2004-2005 (tons)



Source: Department of Statistics, 2007

up to 77%. Nonetheless, although still an important crop to some degree, sunflower production has been declining in Georgia since 2001 although there was some increase in Kvemo Kartli in recent years. For Georgia as a whole,

production has declined by two-thirds since 2001 and by 80% in Kakheti. (Note: In 2000, due to disastrous growing conditions, virtually the entire national crop was left un-harvested.)

Table 2.24: Average Sunflower Yields by Municipalities 2004-2005 (t/ha)

<i>Average Sunflower Yields by Municipalities</i>	
Akhmeta	0.64
Gurjaani	1.27
Dedoplis Tskaro	0.46
Telavi	1.18
Lagodekhi	0.80
Sagarejo	0.51
Signagi	0.63
Kvareli	0.56

Source: Department of Statistics, 2005

Within Kakheti, nearly 50% of all production comes from the municipality of Dedoplistskaro followed by Gurjaani, Signagi, and Sagarejo (see Figure 2.20). The remaining four municipalities combined generate less than 15% of the region's production. Although it is the major producing region, Dedoplistskaro had the lowest yields of any municipality in the region over the 2004-5 crop years, only 0.46 tons per hectare (see Table 2.24). Even Gurjaani with the highest yields in Kakheti only produced 1.27 tons per hectare, roughly one-third of the world average.

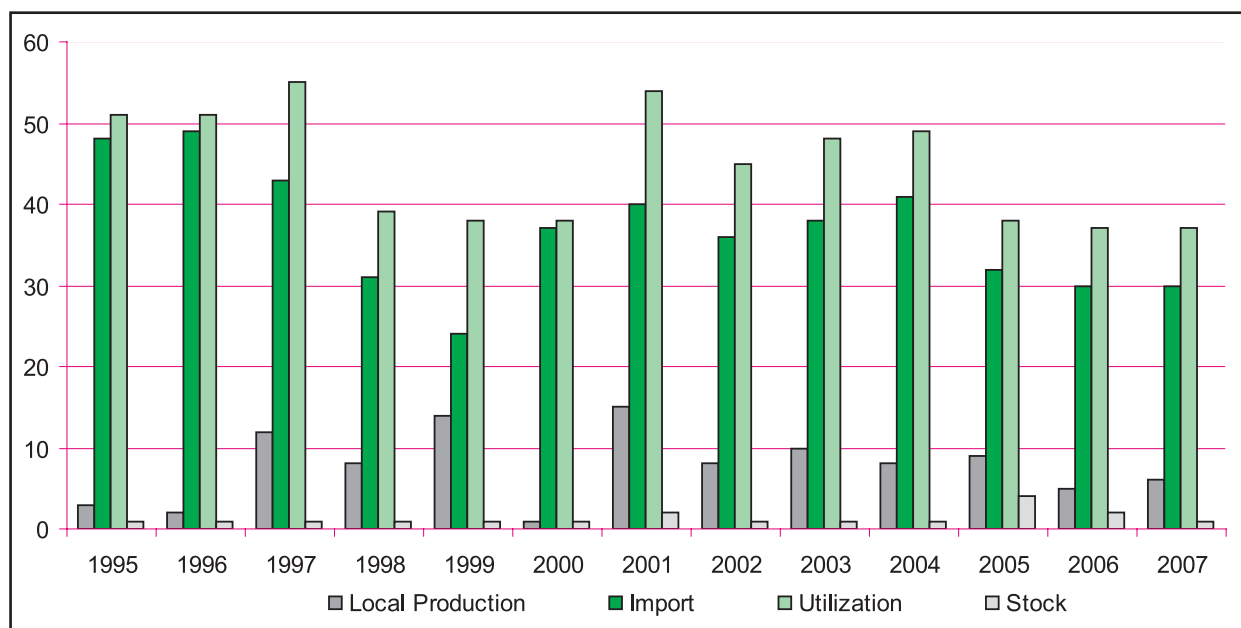
There are number of reasons for Georgia's (and Kakheti's) low yields and declining production. Typically, using currently available varieties, seed, and production technologies, sunflowers are perhaps the least profitable of the field crops. This, combined with increases in energy and other input costs, has meant that sunflowers are typically grown by farmers as a crop of last resort, for personal consumption, and for smaller niche markets, e.g., seed for street sale. The greatest volume demand potential for sunflowers is for its oil and as an oilseed cake for use in livestock feeding. These typically require appropriate processing facilities which no longer exist in Georgia in any substantive way. Yet for there to be such new facilities undertaken, there must be sufficient supply of seed to justify them. That supply is declining. Thus, there exists a "chicken and egg" situation. One will likely not happen without the other, and no one can afford to take the first step without the assurance of the presence of the other.

Yet the production of vegetable oils (and oilseed meal) holds great potential for Georgia. Figure 2.21 reflects that Georgia is presently producing less than 20% of the vegetable oils it consumes each year. While this can range from 25,000-50,000 tons for any given year, for an average year, the country is importing nearly 35,000 tons of vegetable oils. If Kakheti could return to its 1998-2000 hectareage levels and increase yields to 2.5 tons per hectare (only 83% of the world average), then it could produce enough sunflowers to meet the total Georgian demand for vegetable oils. Even if it could only increase yields to 2 tons per hectare, given other sunflower production in Georgia (primarily Kvemo Kartli) combined with possible expansions in soybean production, the country could still be virtually self-sufficient in such oils.

Essentially, in order to realize this existing market for both sunflower oil and meal, a number of things must occur. First, profitability must increase in relation to other crops. This will only occur through the introduction of new and better varieties which both produce more per hectare and have higher oil content. Additionally, appropriate inputs must be available, financing must exist to purchase these inputs, and farmers must know how to use them properly. If at all possible, through irrigation or other means, some production risks must be reduced.

Second, from a processing perspective, facilities must be established with appropriate modern technology which will

Figure 2.21: Vegetable Oil Source and Utilization Balance, 1995-2007 (000 t)



Source: Department of Statistics, 2007

Table 2.25: Georgian and Kakhetian Fruit/Nut Hectarage (2001-2004 Average)

Description	Georgia		Kakheti		Kakheti Share %	
	All (ha)	Bearing (tons)	All (ha)	Bearing (tons)	All (ha)	Bearing (tons)
Apple	11 010	8 417	176	160	1.60%	1.90%
Pear	1 324	1 173	37	33	2.79%	2.81%
Quince	146	132	9	8	6.16%	6.06%
Cherry	588	533	176	160	29.93%	30.02%
Peach	3 123	2 286	1 824	1 479	58.41%	64.70%
Walnut	1 022	902	101	90	9.88%	9.98%
Other Nuts	15 547	13 044	388	199	2.50%	1.53%
Total	32 760	27 487	2 711	2 129	8.28%	7.75%

Source: Department of Statistics, 2005

provide products suitable for the Georgian market, a market which is accustomed to buying imported product which is both differentiated and meets world standards. Georgian processors cannot afford to produce a substandard product which may have been acceptable in past years but no longer is. (This is discussed in more detail in a subsequent chapter.)

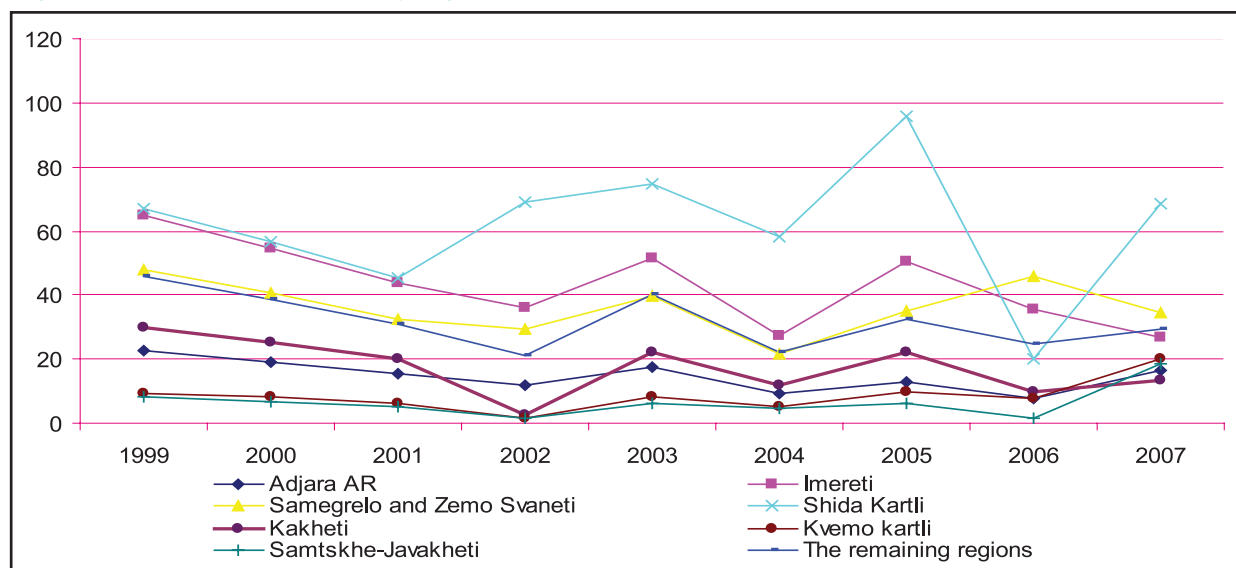
Finally, it is necessary to segment the market according to oil, confectionary, peeling, and perhaps other categories. Each segment will have different specifications whose requirements may need to be matched to raw material

characteristics, e.g., variety, processing qualities. Additionally, the meal by-product must find an outlet into the domestic feed industry. Given some of the likely directions of dairy and poultry in the region, this may become an attractive possibility.

2.4.1.5 Peanuts

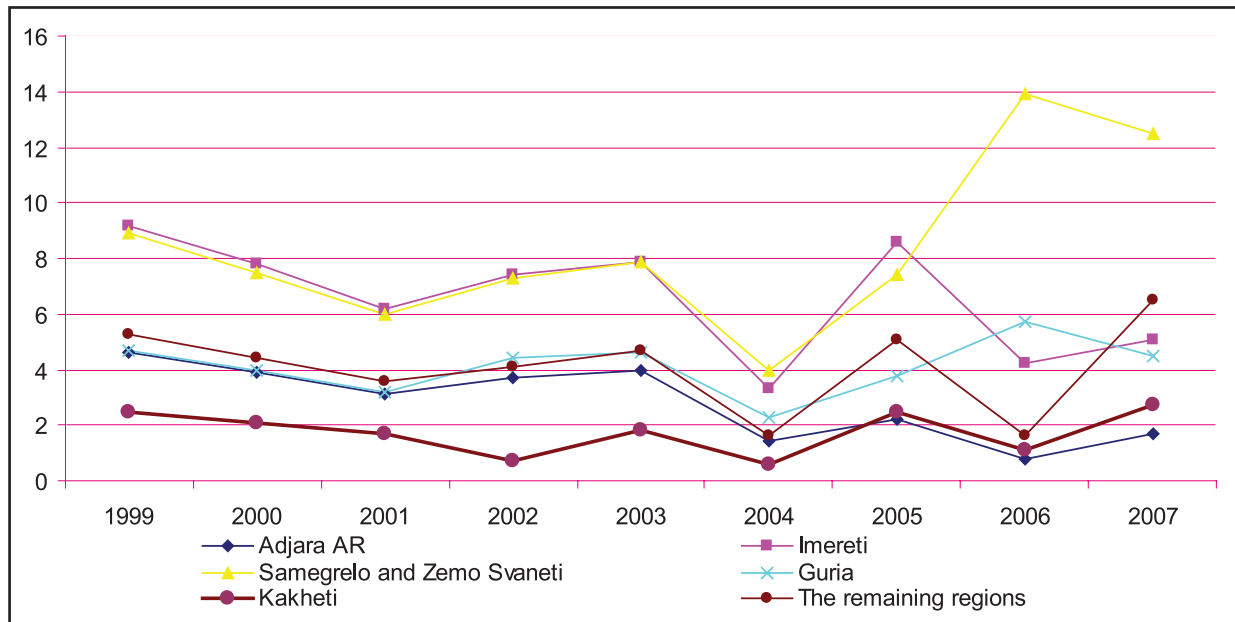
Kakheti is one of the regions of Georgia that does produce peanuts. However, its production occurs only in limited areas in only two municipalities, Lagodekhi and Kvareli. While

Figure 2.22: Fruit Production in Key Regions, 1999-2007 (000 t)



Source: Department of Statistics, 2007

Figure 2.23: Nut Production in Key Regions, 1999-2007 (000 t)



Source: Department of Statistics, 2007

there may be potential for expanding peanut production for salted, confectionary, and other peanut and peanut-based products, this is a longer term proposition. Presently, the varieties, technologies, machinery, and equipment do not exist for larger volume peanut production. Additionally, there are not the processing facilities presently in place to handle any significant volumes.

2.4.2 Perennial Fruit and Nuts

Excluding grapes, fruit and nut production in Kakheti is relatively unimportant compared to other regions of Georgia and other crops within Kakheti. Just over 2,700 hectares of non-grape fruit crops reflected in Table 2.25 are grown in the region, or only approximately 8% of total fruit and nut hectareage and production in Georgia. With some exceptions, fruit and nut production is primarily on small family holdings with much of this in household gardens. Thus, at this time, except for certain exceptions, production does not lend itself to being handled easily through commercial consolidation centers or processing facilities. Rather most production not consumed on farm is and will be marketed in small lots by the farmer himself or through small consolidators who sell from their trucks.

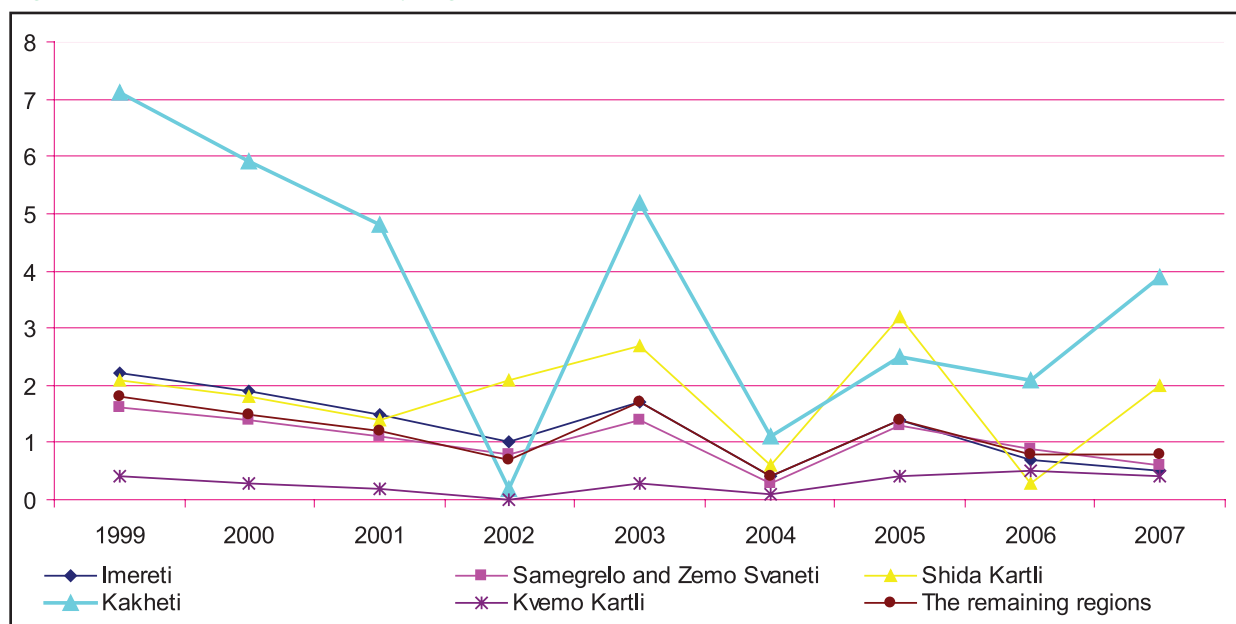
With respect to total non-grape fruit production, in recent years Kakheti has tended to produce only 10-20,000 tons per year (see Figure 2.22). This is probably less than 25% of that produced in Shida Kartli and less than half that in Imereti. Samegrelo and Guria are also larger producers

of fruits than Kakheti. As for nuts, the region is only the fifth most important in Georgia and produces only roughly 2,000 tons per year (see Figure 2.23). However, in both fruits and nuts, there has been an upward trend since 2004.

Within Kakheti, peaches are by far the most important tree crop. Nearly two-thirds of all hectareage in these crops is planted to peaches. Additionally, Kakheti by far is the largest producer of peaches in Georgia with nearly 60% of all planted hectareage in the country and 65% of production (see Table 2.25). While Kakhetian peach production was falling between 1999 and 2004, there has been an upward trend in recent years (see Figure 2.24). Part of the reason for this has been the move of some farmers away from grapes because of the Russian embargo which has hurt wine exports (and thus the demand for wine grapes) more than it has the market for other fruits. There has been a shift also to newer peach varieties which are in greater demand. However, even with this movement to peaches, the Kakhetian industry still has problems marketing all its product each year. Ideally, should there be sufficient volume, a processing facility will eventually be built for excess and off-grade production.

After peaches, cherries are the most important fruit crop in Kakheti from a national perspective with approximately 30% of all hectareage grown in the region. If fact, stone fruits in general (peaches, cherries, and others) are ideally grown in Kakheti vs. many other parts of Georgia.

Figure 2.24: Peach Production in Key Regions, 1999-2007 (000 t)



Source: Department of Statistics, 2007

Interestingly, while fruit and nut production in Kakheta is not currently as important as in other regions of Georgia, yields tend to be far higher in certain of its municipalities as reflected in the following table. For example, apple, pear, and quince production in Signagi are 135%, 291%, and 187% higher respectively than the national average. Lagodekhi has peach yields 155% higher than the national average; Sagarejo, peach yields 295% higher; Akhmeta, nut yields 213% higher; and Dedoplis Tskaro, “other

nut” yields 246% higher. These would indicate that when market conditions are promising and long term investment capital available, there may be significant potential for expanded fruit and nut production in Kakheta.

Additionally, for certain fruits and nuts to be commercially viable, there must be packing (consolidation) and/or processing facilities which do not presently exist in Kakheta. While farmers might not plant additional land to fruits and

Table 2.26: Fruit/Nut Yield Comparisons: Kakheta Municipalities vs. National Average, 2001-2005

Fruit/Nut Yield Comparisons: Kakheta vs. National Average (%)							
Description	Apple	Pear	Quince	Peach	Cherry	Nut	Other Nuts
Kakheta	82.37	80.03	96.86	76.92	186.56	95.23	44.96
Akhmeta	66.67	59.85	48.68	133.62	72.06	212.71	13.00
Gurjaani	83.20	60.73	75.98	21.32	195.63	109.48	84.90
Dedoplis Tskaro	84.27	117.19	157.51	81.10	87.55	33.36	246.31
Telavi	132.40	110.19	124.73	100.99	175.30	121.64	14.63
Lagodekhi	65.32	70.00	97.47	155.05	256.35	75.29	62.05
Sagarejo	46.91	27.89	20.06	1.85	294.68	75.30	65.72
Signagi	134.92	291.13	186.81	107.17	190.77	94.55	8.55
Kvareli	45.15	13.96	20.64	16.54	37.88	36.69	33.17

Source: Department of Statistics, 2005

nuts unless such facilities exist, given the years it takes to reach bearing age for most fruits, nuts, and berries, there is generally sufficient time to begin the development of such facilities after it is clear there will be adequate local production to justify their existence. What will probably be needed by the farmers nonetheless is some assurances that such facilities will actually be built and ready when production starts to come on line.

Most homes in Kakheti tend to have their own fruit and nut trees (or can trade with neighbors when they do not have a particular item). Thus, any significant increases in production volume will have to be marketed elsewhere, either in Georgia's larger cities, in areas of the country that do not produce a fruit found in Kakheti, or exported. With respect to the latter (exports), as with many other areas of agriculture in Georgia, the Russian embargo has hurt fruit producers in Kakheti. In light of these factors and given the generally highly perishable nature of most fruits, an appropriate cold storage and transportation system will also need to be developed if this sector is to be able to increase significantly in the future.

While statistical data was not readily available, strawberries are an important crop in parts of Kakheti, and production has grown in recent years. This is a crop that is felt to have additional potential for the region. While the primary and highest value market is for fresh sales, it also has the potential to be processed into jams and jellies and sold in frozen form. Thus, this is a crop which should be followed

and supported, especially given its high value nature. Another berry crop, blueberries, will likely not have any potential in Kakheti due to its requirement for acidic soils which do not typically exist in the region.

Finally, while little data was available on nuts, there seems to be a sense that expanded hazelnut and walnut production may hold potential for the region.

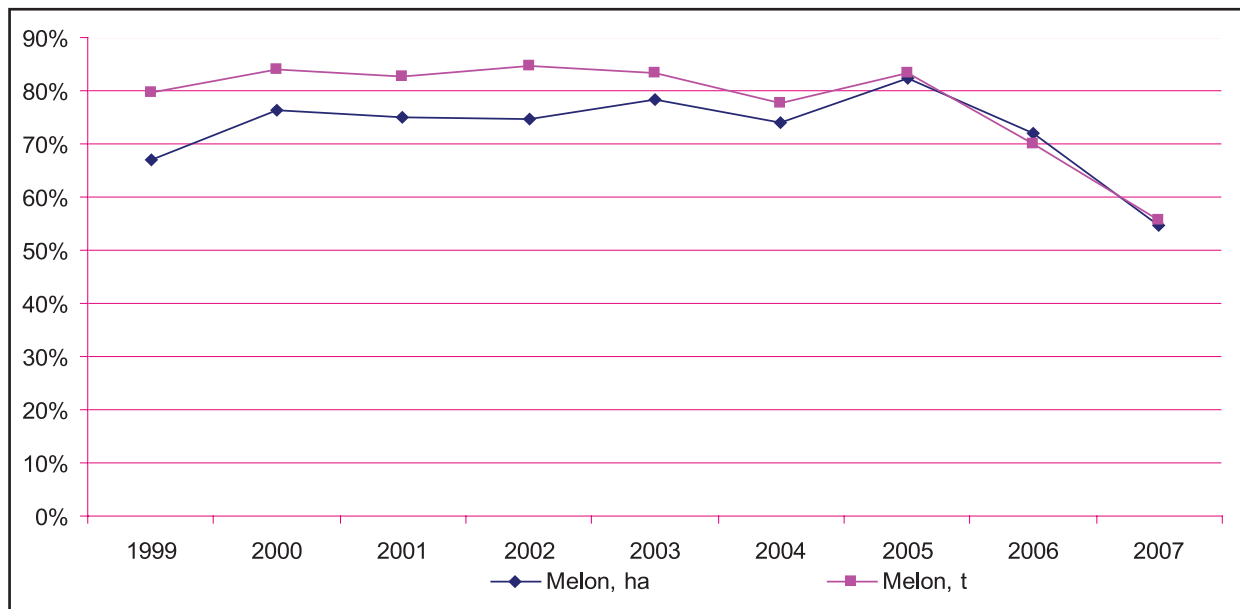
2.4.3 Melons, Potatoes, and Other Vegetables

2.4.3.1 Melons

Kakheti is by far the largest producer of melons (melons, watermelons, pumpkins) in Georgia. Consistently over the past decade, it has grown 65-85% of all such crops produced in Georgia (see Figure 2.25). In 2005, nearly 8,000 hectares were dedicated to melons within Kakheti although this seems to have been falling in the last several years (unless this is a statistical anomaly related to changes in survey methodology).

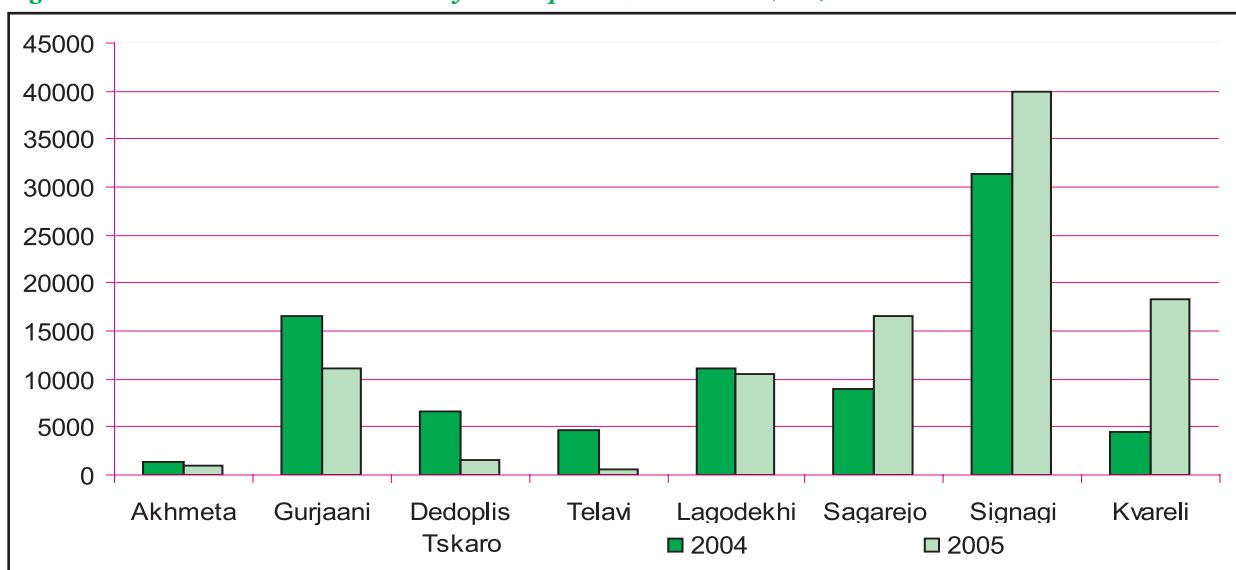
Although production expenses are high, melon profitability far exceeds that for field crops and does not have the long non-bearing years associated with new fruit and nut plantings. To be consistently and optimally profitable, melons must be grown on irrigated land. Thus, existing production and any future expansions will be restricted to those areas with good water systems, functioning water systems, and/or the ability to irrigate economically from

Figure 2.25: Proportions of Georgian Melons Produced in Kakheti, 1999-2007



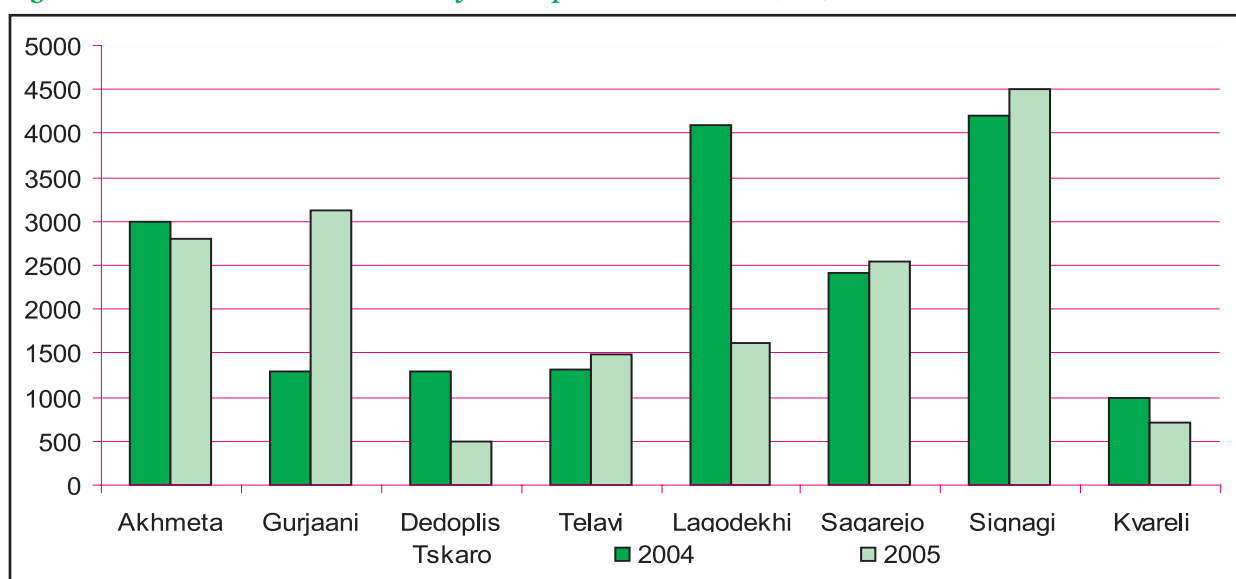
Source: Department of Statistics, 2007

Figure 2.26: Kakheti Melon Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005

Figure 2.27: Kakheti Potato Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005

farm based water resources, i.e., groundwater, ponds, creeks. As is evident from Figure 2.26, within Kakheti, the largest producing municipality by far is Signagi followed by Kvareli and then Sagarejo.

2.4.3.2 Potatoes

While potatoes are one of the most popular foods in Georgia, they do not occupy a place of equal importance to many other crops produced in Kakheti. Additionally, this region is insignificant as to its share of national potato production

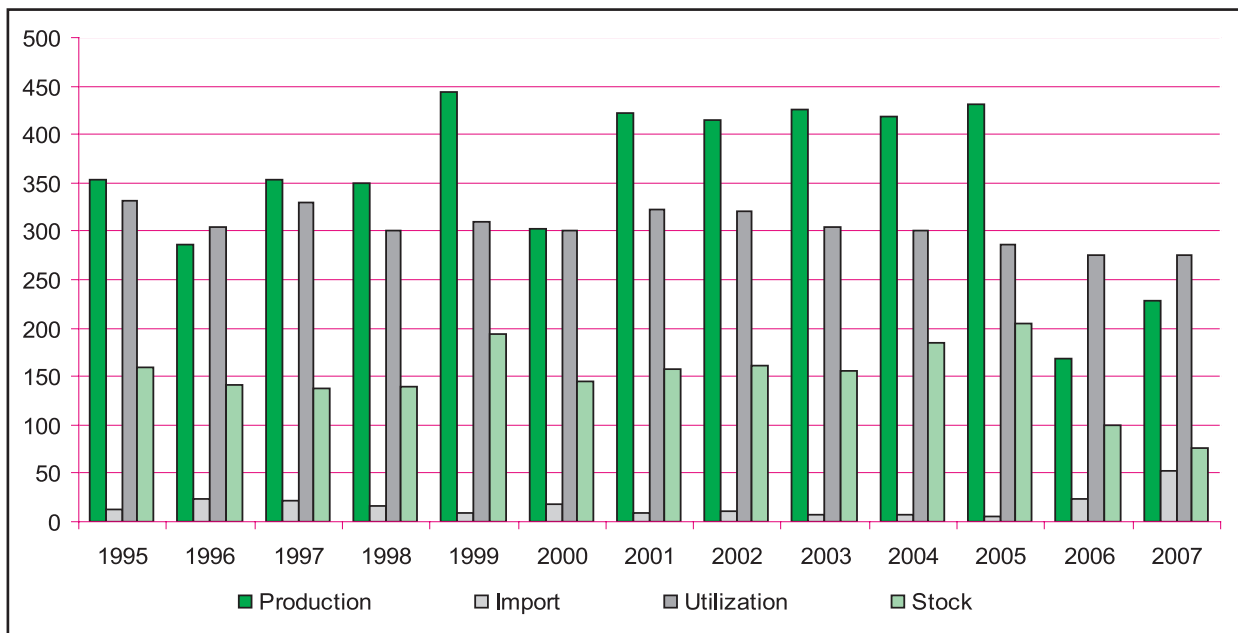
(approximately 4% in 2005). Nonetheless, potatoes are still produced on over 3,300 hectares in Kakheti which exceeds that area for any fruit or nut crop except grapes. Kakheti's potatoes tend to be grown on irrigated lands.

Although potatoes are grown in every municipality at least for home consumption and small scale marketing, Signagi is Kakheti's largest producing municipality with 1,000 hectares and 4,500 tons of production in 2005. It is followed by Gurjaani, Akhmeta, and Sagarejo each with over 2,500 tons of production (see Figure 2.27.).

As seen in Figure 2.28, Georgia is essentially self-sufficient in potato production and tends to carry over significant stocks at year end which meets most market needs until the new harvest. The steep decline in production in 2006 is felt to reflect the change in data collection methodology rather than a fall in production of more than 50% from the preceding year.

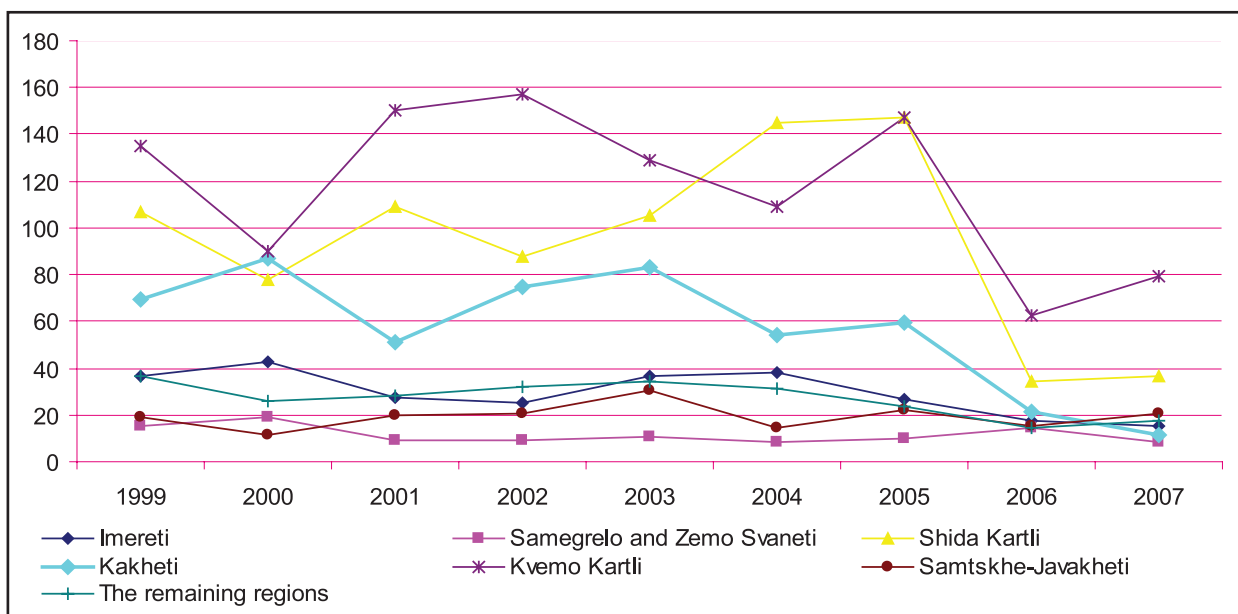
As Georgia has tended to produce in excess of 400,000 tons annually of potatoes and Kakheti less than 5% of this, there might be the expectation that farmers in this region could significantly expand production and find a domestic market without having any material negative effect on prices. In fact this could be done simply by increasing yields to those

Figure 2.28: Georgia Potato Sources of Supply, 1995-2007 (000 tons)



Source: Department of Statistics 2007

Figure 2.29: Georgian Vegetable Production by Key Regions, 1999-2007 (000 t)



Source: Department of Statistics, 2007

similar to Georgia as a whole. Currently, potato yields in Kakheti are less than half of the national average (less than 5 tons per hectare versus the national average of generally over 11 tons). On the surface, these poor yields seem to be a function of lower quality seed and the absence of appropriate technologies that allow greater land utilization and reduce field losses, e.g., better seeders, cultivators, and harvesting equipment. Until these problems are overcome, while there may be an increase in production due to yield increases, there will not likely be an increase in hectareage planted to potatoes as there are more profitable cropping options presently available in the region.

2.4.3.3 Other Vegetables

While Kakheti is not the largest vegetable producing region in Georgia, through 2005, it was among the top three after only Kvemo Kartli and Shida Kartli respectively (see Figure 2.29). In fact, until recently, over 9,000 hectares were dedicated to this crop in Kakheti, which makes it more important than all fruit, nut, and potato hectareage combined. Most production occurs on relatively small plots with little use of machinery or other equipment. (Note: It is not clear whether the steep declines reflected in 2006-2007 are reflective of actual changed conditions for vegetables in Kakheti or a statistical anomaly associated with the changed data collection methodology. Generally, where there may have been some decline, it is thought that the latter is the cause of the apparent degree of the

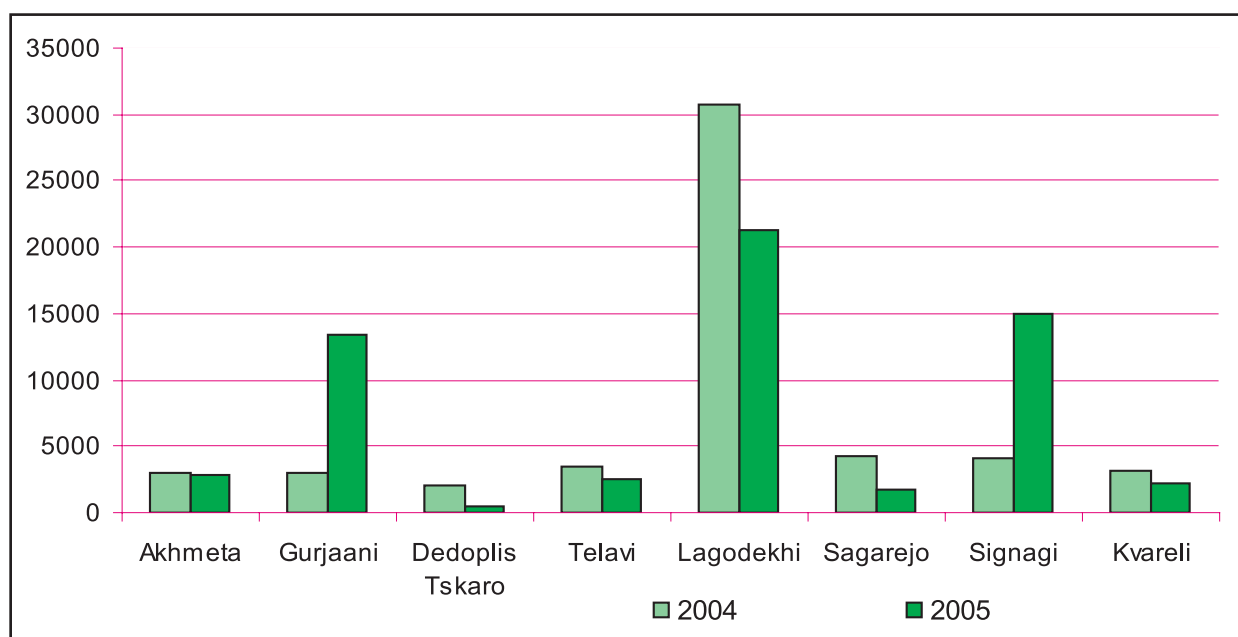
decline. In fact, with the grape situation, farmers have to look at other crops such as vegetables to augment their incomes.)

Within Kakheti, Lagodekhi is the major producing municipality followed by Signagi and Gurjaani respectively (see Figure 2.30). Production locations for specific crops are primarily defined by localized climatic conditions and the availability of irrigation.

As with fruits and nuts, most homes in the region, even those in towns, tend to have their own vegetable gardens for household consumption or modest local sales. Thus, any significant increases in production would have to be marketed outside the region, either in Georgia's major cities to the west, other areas of the country not suitable to producing those vegetables grown in Kakheti, or for export. All these will require appropriate packing, processing, and cold storage facilities as well as an improved transportation system which maintains quality.

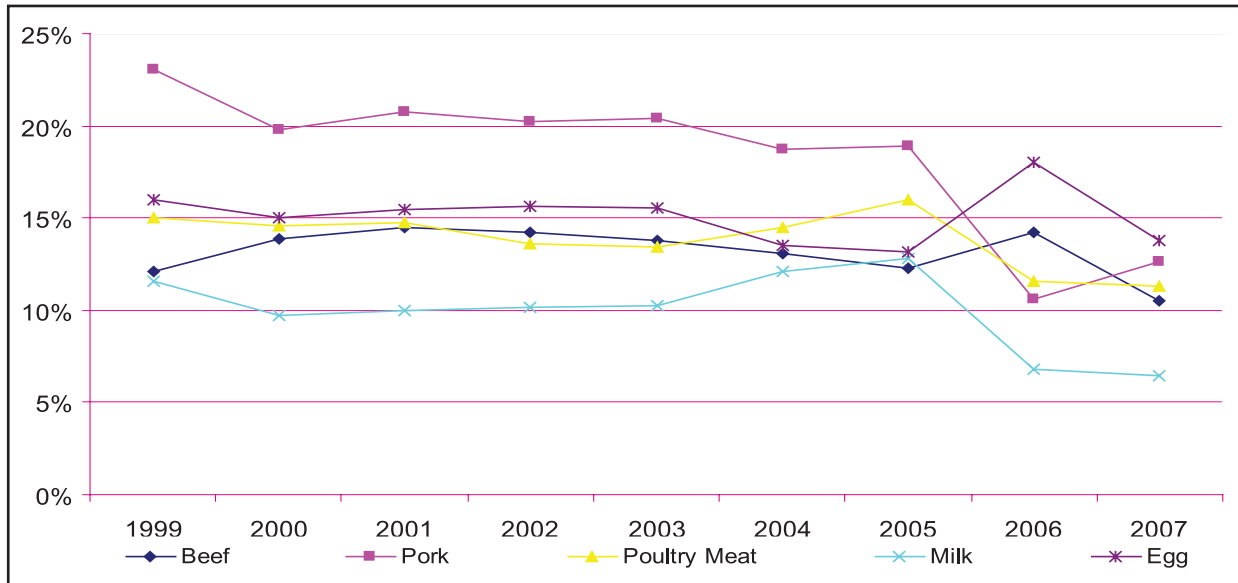
Unlike for perennial fruits and nuts, significantly expanded vegetable production cannot wait several years for such facilities and services to be in place. If the hectareage is planted and the remainder of the market chain is not in place, then producers face major losses. Consequently, it is imperative that farmers, government, related businesses, and investors work in concert if this is an area in which profitable growth is to be achieved.

Figure 2.30: Kakheti Vegetable Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005

Figure 2.31: Proportion of Georgian Total Value of Major Commodities in Kakheti



Source: Department of Statistics, 2007

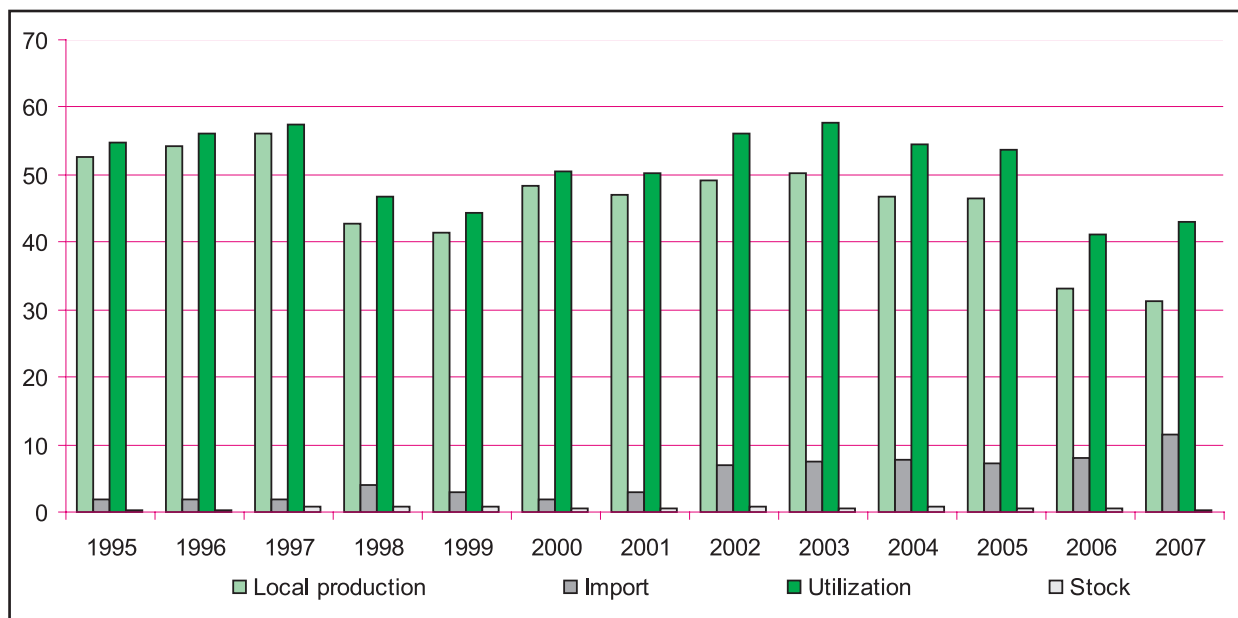
Obviously, the continued embargo by Russia of fresh produce hinders the most promising external market for these products. However, the embargo can be bypassed to some degree by selling product into Azerbaijan, which then repackages and exports to Russia. This means that Georgian producers cannot secure returns as high as they might if able to if they were able to export directly to Russia. Nonetheless, Kakheti is better positioned geographically to

take advantage of this re-export opportunity than any other of Georgia's regions due to its proximity to Azerbaijan.

2.5 Livestock Production

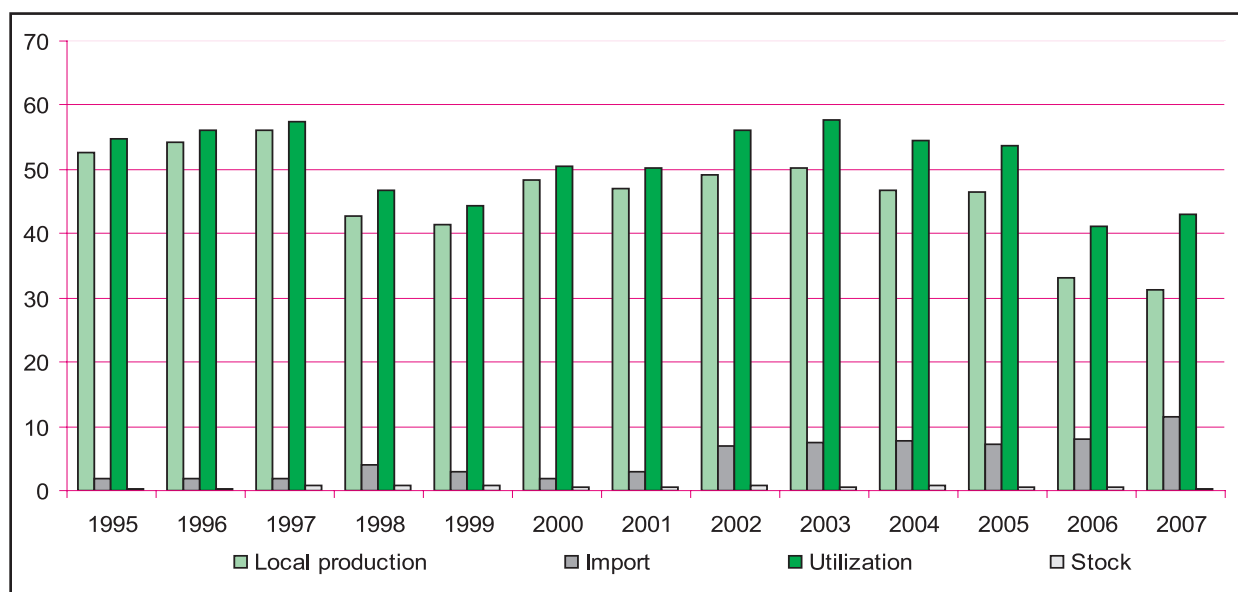
As stated at the beginning of this chapter, livestock production and livestock products are a major component of the Kakheti's food and agricultural sector and the regional

Figure 2.32: Food Balance: Beef, 1995-2007 (000 t)



Source: Department of Statistics, 2007

Figure 2.33: Food Balance: Milk and Milk Products, 1995-2007 (000 t)



Source: Department of Statistics, 2007

economy. For virtually every livestock category, Kakheti's share of national production exceeds its percent of the national population (see Figure 2.31). The only area where it does not presently seem to do so is in milk. However, this is thought to be a shortcoming in the data collection methodology rather than reflecting actual conditions, especially given major donor initiatives in dairy in the region. As a minimum, it would be felt to be equivalent in its share of national production as beef production since, in Georgia, the two are so closely linked.

2.5.1 Cattle

As reflected in Figures 2.32 and 2.33, Georgia is relatively self-sufficient in beef production but somewhat less so in milk. Although beef imports have more than tripled since 2001, the nation is still producing over 80% of the beef it consumes. This increase in imports can, in part, be attributed to an increased demand for higher quality

and processed meats in urban areas associated with rising incomes among certain Georgians. With respect to milk and milk products on the other hand, total demand as well as imports have tended to stay relatively flat or fall during this same period. Nonetheless, approximately one-quarter of Georgia's needs for milk and milk products have had to be imported until 2005. Both these product areas (beef and milk/milk products) represent a significant import substitution opportunity. As a consequence, there are several international donor assistance projects focusing in these commodities.

While Kakheti is often thought of as a major cattle region of Georgia, in reality cattle numbers and related production are proportionately only slightly higher (at 10.3% for cattle, 10.9% for milk, and 12.2% for beef) than its share of national population (just over 9%) and significantly less than its share of farms (15.4%) and agricultural lands (38.5%) (See Table 2.27). In fact, Kakheti is only

Table 2.27: Cattle Numbers and Production: Kakheti vs. Georgia, 1999-2007

Index	Kakheti	Georgia	Kakheti % of Nation
Cattle (000 heads)	117.0	1160	10%
Milking Cows (000 heads)	70.0	661	11%
Beef (000 t)	5.8	44	13%
Milk (000 t)	70.0	693	10%

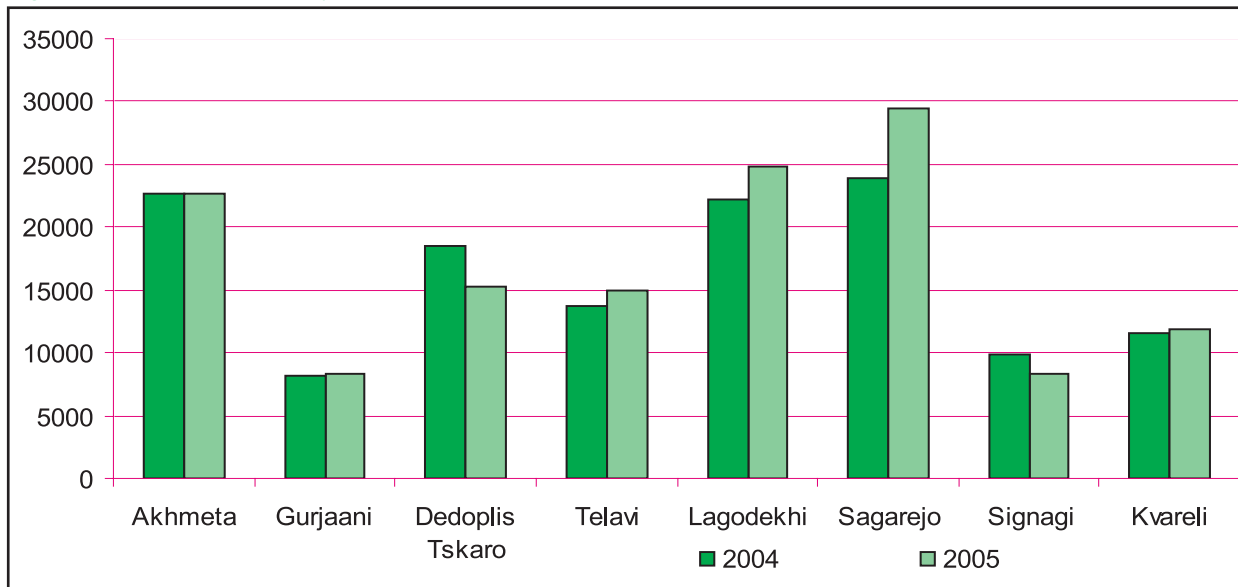
Source: Department of Statistics, 2007

the fourth largest region in cattle numbers after Imereti, Samegrelo, and Kvemo Kartli in that order.

Within the region, Sagarejo, Lagodekhi, and Akhmeta have the largest numbers of cattle and the greatest levels of beef and milk production (see Figures 2.34, 2.35, and 2.36). While numbers of cows have supposedly declined nationwide since 2005, in Kakheti, numbers are up in five

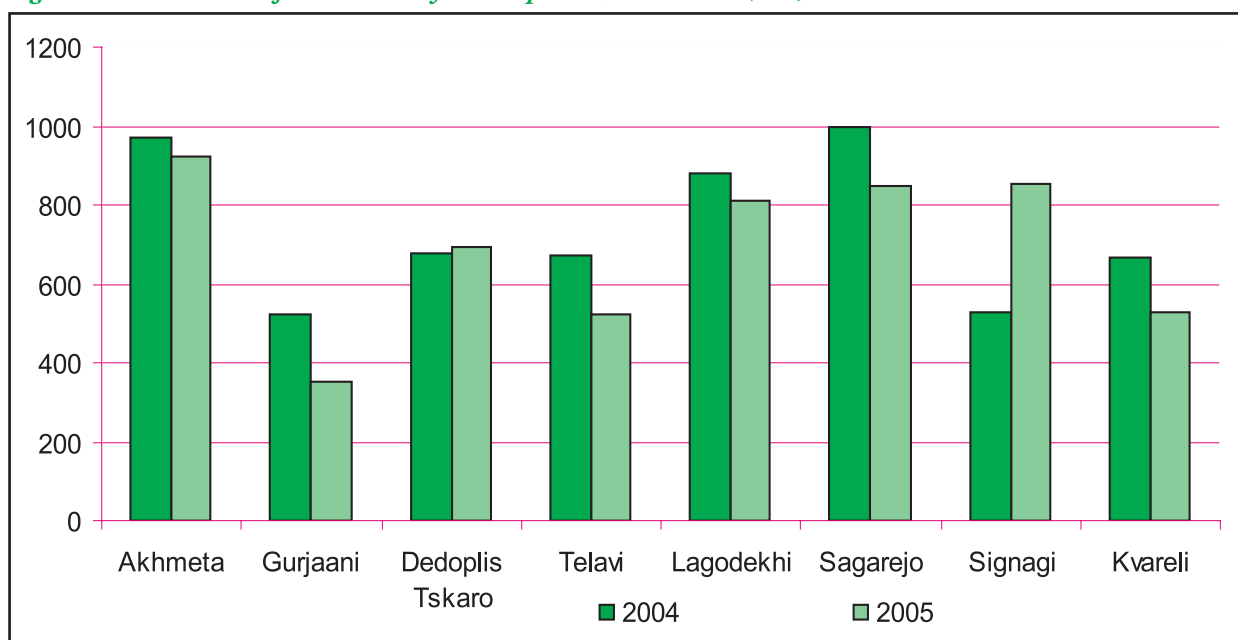
municipalities, constant in one, and have fallen in only two during the 2006-2007 period. Milk production is also up in six municipalities and down in only two. It is in beef production where there may have been a slight decline in the 2002-2007 period. However, given rising numbers of cattle, this may simply be an indication that farmers are expanding herd size in order to meet the demand for milk and milk products.

Figure 2.34: Kakheti Cattle by Municipalities, 2004-2005 (head)



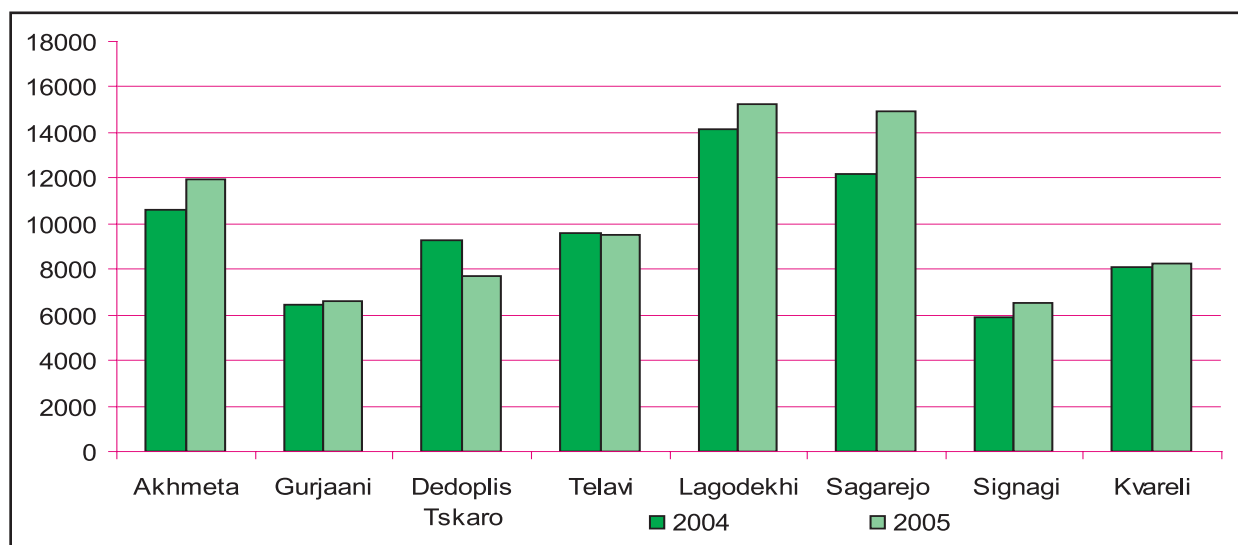
Source: Department of Statistics, 2005

Figure 2.35: Kakheti Beef Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005

Figure 2.36: Kakheti Milk Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005

Table 2.28 reflects a productivity index which compares municipality by municipality productivity in Kakheti as a percent of national productivity. Interestingly all Kakheti's municipalities have higher productivity than the national average for beef, some significantly so (with Telavi, Signagi, and Gurjaani all at more than twice the national average). With respect to milk, however, although the regional average is slightly higher than the national average, some municipalities are more productive than the nation as a whole and some are less productive.

Milking productivity is low in Georgia at only 1.2 tons per cow (vs. significantly over 5 tons in Western countries). Some of this can be attributed to the fact that most Georgian farmers grow cattle that have value both for beef and milk production rather than being specialized in either one or the other. However, there are other factors as well. Through improved nutrition, veterinary services, and breeds and through shifting the calving cycle, significant improvements in productivity can still be achieved.

Table 2.28: Beef and Milk Productivity: Kakheti vs. Nation, 2005

<i>Beef and Milk Productivity (% of National Average)</i>			
Beef		Milk	
Kakheti	158.30	Kakheti	99.27
Telavi	226.65	Kvareli	130.62
Signagi	214.56	Signagi	130.22
Gurjaani	204.13	Gurjaani	125.27
Kvareli	187.79	Telavi	117.62
Akhmeta	145.48	Lagodekhi	103.69
Dedoplis Tskaro	142.74	Sagarejo	89.93
Sagarejo	129.25	Akhmeta	88.96
Lagodekhi	123.02	Dedoplis Tskaro	62.09

Source: Department of Statistics, 2005

Within the dairy sector, there have been a number of positive factors in recent years. A SIDA GRM dairy project has concentrated much of its efforts in Kakheti since 2006. To date it has helped form 24 Dairy Farmers Association (DFA) and has in place 11 milk collection centers which draw on nearly 500 farmers for their volume. GRM is working with its associated farmers to significantly increase milk production for cows by shifting the calving cycle to increase milk production during winter months when supplies are lower and prices higher. In order to do this, it is necessary to develop a supplemental feeding program which is underway using silage made from grape and other agricultural by-products in the region mixed with urea. Apparently the cost of purchasing this silage is more than offset by the value of increased production during the winter. SIDA through GRM also is embarking on a sustainable technical assistance program where a livestock specialist will be placed with each of its DFAs. This, too, should increase productivity over time as farmers begin using the knowledge conveyed to them by these specialists. A National Dairy Farmers Association has also been formed which will provide support to these technical specialists as well as help in the production of silage and advocate on behalf of the industry.

In addition to SIDA, MCG ADA has supported several dairy projects in Kakheti which include US\$100,000 grants to two dairy enterprises to make cheese.

For a short period, with world milk prices so high, Georgian dairy products companies began to turn away from importing powdered milk to buying Georgian fresh milk. Although world milk prices have since fallen thereby dampening this demand, the long term outlook for dairy in Georgia is felt to be positive with respect to farmers being able to sell increased volumes of milk to such companies. Part of this results from the entry into the market of two new dairy products companies, Amaltea and Wimm-Bill-Dann (an international firm which has entered the Russian market in a large way and has bought Georgian Produce. It has a large facility in Rustavi.). These two will augment and compete with two other Georgian firms, Sante and Eco Food. While such firms will buy milk wherever it is cheapest (such as the import of milk powder when that is the most cost efficient approach), it is still felt the increased presence of such firms is a positive development for Georgia's dairy farmers.

There also seems to be a very promising niche market in Kakheti for dairy products made from buffalo milk. One such opportunity presently exists for buffalo milk-based yogurt which is quite popular domestically. Populi has

already expressed an interest in carrying such a line if a dependable quality supply of the product can be produced. In addition, this is the type product which could have an appeal to up-scale consumers in the United States and Western Europe. In addition to yogurt, there are other buffalo dairy products which can be produced including buffalo mozzarella cheese which is quite popular in the United States. To date, no entrepreneur or DFA has chosen to pursue the buffalo dairy products concept.

In addition to dairy products, there may also be another production/market opportunity on the beef side of Georgia's cattle industry. Presently, the cuts and quality of meat available in Georgia do not meet the standards found in Western Europe, the Far East, or the US. While at this time the market for such cuts and quality is not as large per capita as in these other regions of the world, still it is felt that there may be sufficient demand to warrant the development of an operation that utilizes new beef-specific breeds which are raised and slaughtered similar to the more advanced countries of the world.

One regulatory factor could have a major impact on the country's dairy (as well as beef) industry, i.e., the eventual implementation of the food safety law which is now scheduled for January 2010 for dairy and meat. When this occurs, it may well result in the closing of numerous small cheese making operations which now buy milk from dairy farmers or which may actually be operated by the farmers themselves. This does not mean the farmer will have lost his market for milk. Rather it means there will be a shift from selling to the smaller cheese and dairy products enterprises to larger more sophisticated ones. It is speculated that this may end up resulting in lower per unit prices for milk but a greater demand for milk. If that were to occur, dairy farmers could likely still remain as profitable as they now are provided they increase their productivity and reduce the per unit cost of the milk they produce.

Within the area of beef (and other livestock meat production), the enforcement of the food safety law also could have major ramifications. Presently most animals (with possibly the exception of commercially produced chickens) are slaughtered in the open air under unsanitary conditions with unsafe disposal of the resulting wastes. Under the new law, such conditions will not be permitted for any meat products entering the food distribution system. (Actually there is an unenforced current law which already requires all meat to be slaughtered in facilities which comply with government standards.)

The Ministry of Agriculture is already planning for enforcing the law should it be implemented in 2010. While

it is preparing to put in place the necessary regulations, procedures, and trained staff necessary to oversee the law's implementation, perhaps equally importantly, it is working to help farmers and other comply with the law. Presently it is coordinating with a project being undertaken by a USAID AgVANTAGE project which will be developing a modern cattle slaughter facility in a village north of Telavi where the residents have a long standing involvement in the consolidation, slaughter, and marketing of cattle. Hopefully, this project will provide a viable model for the construction of other such facilities in the future. Short of this more sophisticated facility, it has also been suggested that government and donors should promote the development of "slabattoires," which are simpler versions of the more advanced operation being funded by USAID. However, even these operations, while hopefully an improvement on what exists, can have major health safety problems if not managed properly to include the disposal of wastes.

While the development of modern slaughter, storage, and handling of meat may often be concentrating on the cleanliness of the process and the proper disposal of wastes, a movement in this direction by government poses other potentially devastating downsides for livestock producers. It is very likely that animals slaughtered at these facilities will also be tested for various diseases, e.g., tuberculosis, anthrax. If an animal is found to be infected, it may be killed and disposed of with the farmer receiving no compensation.

While the solution to this problem is an effective vaccination program, such a program does not presently exist. For years the government through the Ministry of Agriculture has had a program that was intended to vaccinate all targeted animals in the country. Since independence, this program has not been able to fully meet its objectives. Recently government has begun to move away from providing this service at all, even at its previous less than comprehensive level. It is the belief among many in government that vaccination should be the responsibility of the livestock farmer, not government. Of course, given the current state of agriculture and generally low incomes of farmers, it is unlikely many farmers will feel they have the funds to pay for vaccination themselves. While there is a move back to government involvement, it is uncertain what will finally be done, to what extent, and how effectively.

Even if government does move back to its earlier involvement, that system was not adequate to provide comprehensive coverage. One of the problems is that there is no effective tracking system for which animals have been vaccinated and which have not. Thus, for disease prevention which requires follow-up vaccinations to be effective, the administering veterinarian can never be certain which animals have received the first dose of medication. A national tagging system has been suggested as the solution by a number of advisors to the government. However, given its costs and possible farmer resistance, it has not been agreed to as of this time. Nonetheless, the

Figure 2.37: Food Balance, Pork 1995-2007 (000 t)



Source: Department of Statistics, 2007

SIDA GRM dairy project in Kakheti has a trial tagging project in Gavazi village in Kvareli with 92% of the cows in the village presently part of the program. This project should provide good insight into the cost and viability of such a program if implemented region or nationwide. If the decision to proceed with a national program is made, there are donors who have offered to fund the costs of initial implementation if government will commit to funding the operation of the system thereafter.

2.5.2 Pork

While pork production in Georgia remained relatively constant during the 2000-2006 period with only minor annual fluctuations, its imports, like those of beef, steadily grew to more than quadruple average 2000-2001 levels (see Figure 2.37). In fact, by 2006, imports supplied over 20% of domestic pork consumption. While this should have represented an important import substitution opportunity for the nation's farmers, the African swine fever outbreak in 2007 has set back the industry significantly. It is still unclear what the medium-to-longer term effects of this outbreak will be. In fact, at one point, FAO advisors were recommending major reductions in the national herd. While this was initially resisted at the time, as the problem persisted and spread, it is

estimated that eventually 70-80% of all hogs in Georgia were killed and disposed of with no compensation to farmers.

While pork production had been declining in Kakheti over the decade even prior to the onset of African swine fever, the region's hog population and production tonnage as a percent of national totals (16.2% and 16.5% respectively) exceeded the regional population percent significantly (just over 9%) and are even slightly greater than the region's share of national farm holdings (15.4%). (See Table 2.29.) Nonetheless, Kakheti still trails Samegrelo, Imereti, and Kvemo Kartli in hog numbers and production although as recently as a decade ago, Kakheti was the major producing region in the nation (see Figures 2.38 and 2.39).

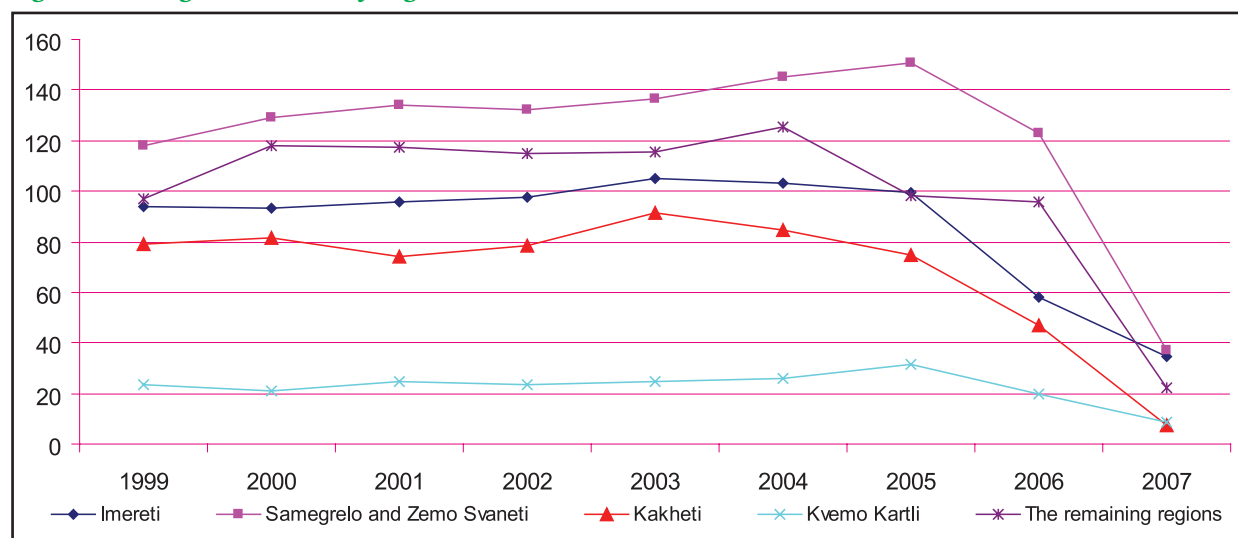
Pork is produced in all municipalities of Kakheti with the largest producers being Kvareli, Telavi, Akhmeta, and Lagodekhi in that order where forest resources are used for feeding, i.e., hogs are allowed to forage in forests (see Figure 2.40). Until 2005, pork production volumes are actually higher than for beef in six of Kakheti's eight municipalities as seen when comparing the following table and that for beef production by municipalities above. However, with the reductions in hog numbers since the outbreak of African swine fever, that is no longer the case.

Table 2.29: Hog Numbers and Production: Kakheti vs. Georgia, 1999-2007

Index	Kakheti	Georgia	Kakheti % of Nation
Hogs (000 head)	69	401	17%
Pork (000 t)	6	34	19%

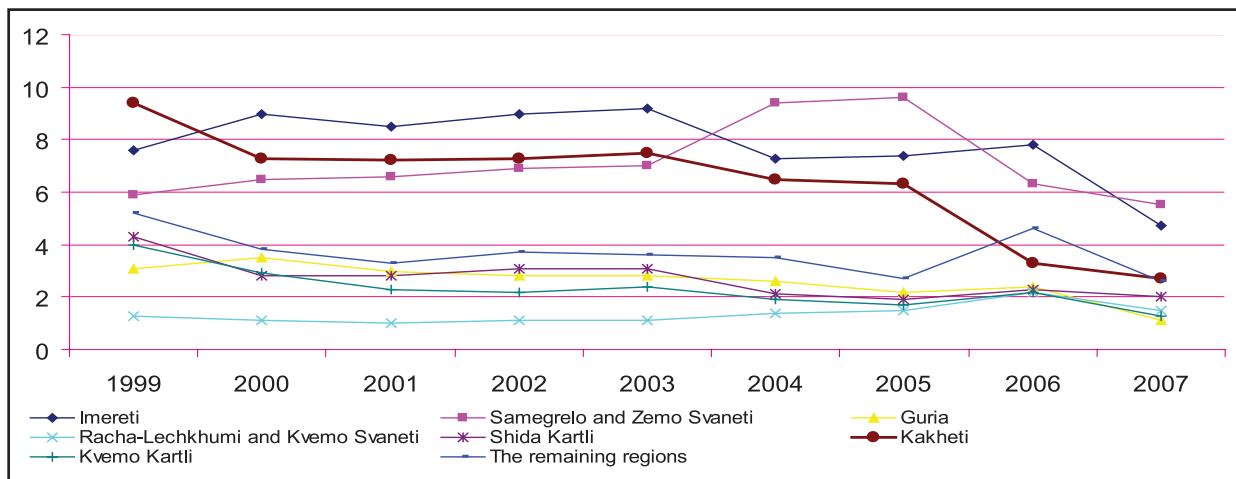
Source: Department of Statistics, 2007

Figure 2.38: Hog Numbers in Key Regions: 1999-2007 (000 heads)



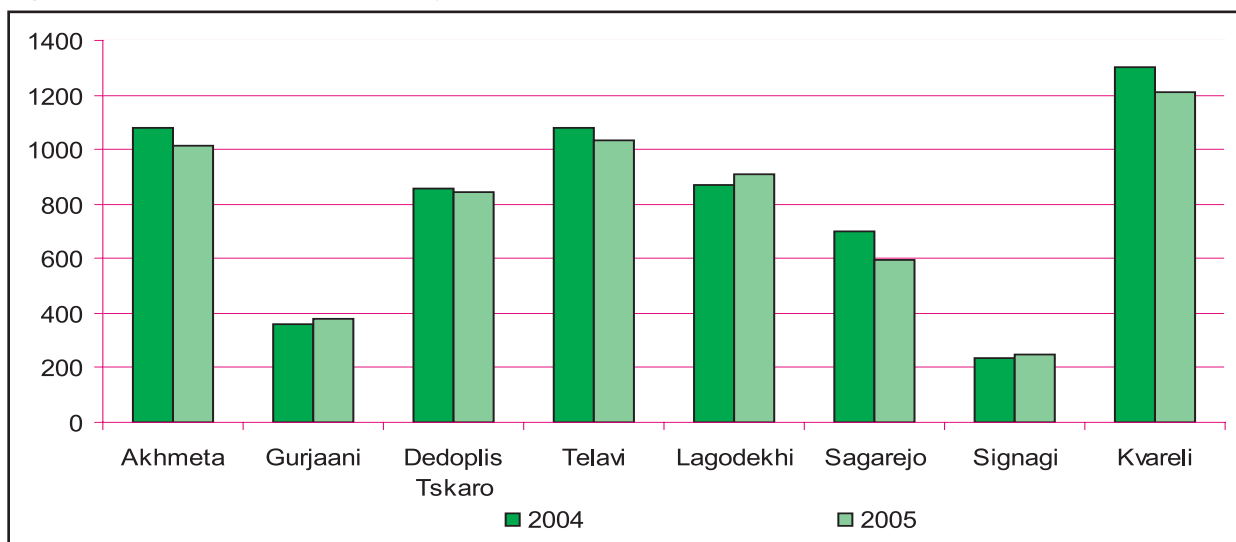
Source: Department of Statistics, 2007

Figure 2.39: Pork Production by Region: 1999-2007 (000 t)



Source: Department of Statistics, 2007

Figure 2.40: Kakheti Pork Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005

Table 2.30 reflects an index which compares municipal productivity as a percent of national productivity. With one exception (Kvareli), all other municipalities have a productivity index greater than the national average with Kakheti as a whole being nearly 13% more productive than the national average. Two of Kakheti's municipalities, Signagi and Sagarejo, have significantly higher coefficients being 75% and nearly 50% respectively more productive than pork producers in the nation as a whole.

In the absence of African swine fever, with growing national pork demand and imports, pork production should provide an ideal economic development opportunity for Kakheti, especially given its proximity to Tbilisi. Additionally,

profitable hog production can be designed to benefit small farmers, which may be especially important in Kakheti at this time given some of the difficulties these farmers now face with respect to grape production on which so many are heavily dependent. However, success in doing so will require the region to reverse its trend since 1998 of significantly falling production. In order for the region to succeed, competitive, and as profitable as possible, it is likely that it will have to:

- Improve the nutritional content of rations fed to hogs
- Interbreed or produce with more productive imported species suitable to local conditions
- Improve veterinary services and hygienic conditions

Table 2.30: Pork Productivity: Kakheti vs. Nation, 2005

<i>Pork Productivity (% of National Average)</i>	
Kakheti	112.63
Signagi	175.09
Sagarejo	149.41
Gurjaani	127.00
Telavi	111.94
Akhmeta	110.48
Dedoplis Tskaro	105.50
Lagodekhi	105.03
Kvareli	86.71

Source: Department of Statistics, 2005

- for hogs, especially during slaughter and market handling process
- Effectively address the threat of African swine fever which may require that all hogs be raised in confined areas which preclude contact with foraging hogs (feral or domestic)
- Adopt other enhanced production technologies as needed, e.g., appropriate vaccination, improved breeding and sow-piglet care

Yet even if these can be undertaken, the key factor at play here is the limitations that the outbreak of African swine fever may now place on this industry. Unfortunately, it may take as long as 50 years or more before all traces of the disease have disappeared before hogs can be reintroduced into the same production locations safely. In Italy, one of the few countries which have experienced this disease, for 25 years it managed to not have an outbreak. Then when it was thought victory had been achieved, the disease resurfaced in the 26th year.

Nonetheless, at this time, farmers in Georgia are already beginning to reintroduce hogs into some of those areas where they were slaughtered by government only 1-2 years ago. If these first steps occur without a new outbreak, then further expansion will occur. However, if traditional approaches to production, e.g., grazing in forests, are reinstated, then it seems highly possible that there will be a new outbreak in the not too distant future.

A logical approach might be the adoption of the production approach utilized in Western nations, e.g., confined production. However, to do this is much more capital intensive and will require extensive fencing of the facility

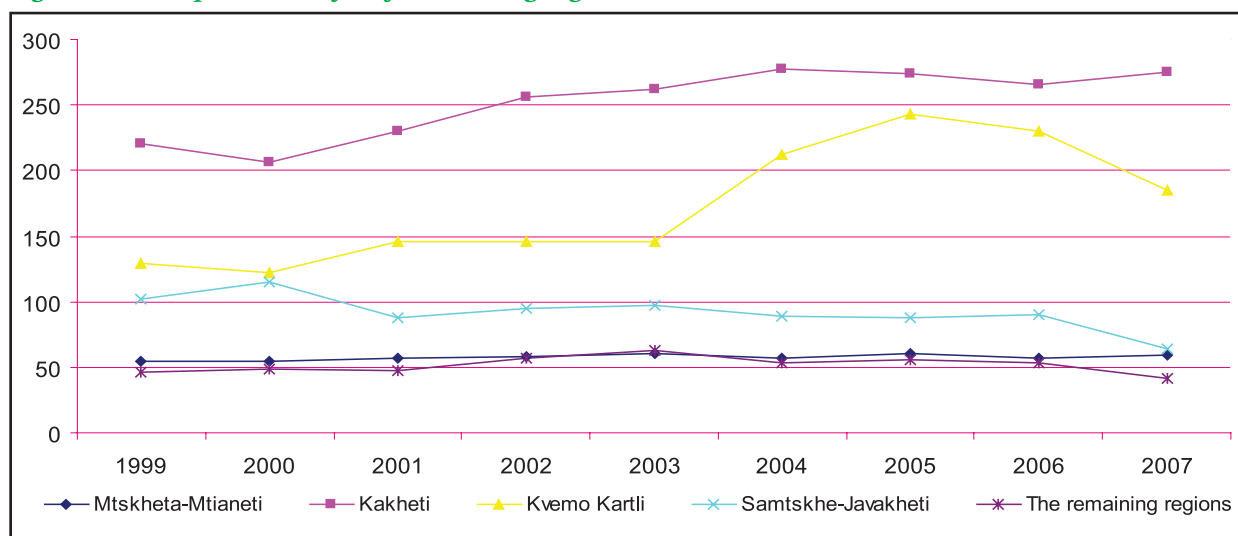
to prevent wild hogs from contaminating the confined animals. Additionally, it will require availability of cost effective feeds since grazing will not be an option. Finally, there is the issue of international competitiveness. At this time, frozen pork from Brazil can be landed in Poti at US\$1,500-1,600 per ton which is cheaper than it can now be produced in Georgia. The question, then, is whether Georgian consumers (to include restaurants) are willing to pay more for fresh Georgian produced pork. At this time, it is felt that there would be sufficient demand for such a product so as to justify a confined production facility. If the government wished to encourage such an approach, then what it might best do to promote the concept would be to provide compensation guarantees if African swine fever were to break out in this operation even though it followed the best sanitary practices possible.

2.5.3 Sheep and Goats

Unlike for both cattle and hogs, sheep numbers and related production (meat and wool) has generally been rising since 1998 although there was a slight downturn in 2006. Also, unlike for beef and pork, the import of lamb and mutton has remained relatively flat during this period. In Kakheti there is a long-standing tradition of raising sheep for the production of both meat and wool. In fact this region is the most important in Georgia with approximately 40% of all sheep and over 35% of wool production although Kvemo Kartli is a relatively close second (see Figure 2.41 and Table 2.31 for Kakheti and Georgia data).

While less important economically than sheep, the number of goats has been rising even more significantly on a national basis with numbers increasing by over 40%

Figure 2.41: Sheep Numbers by Major Producing Regions, 1999-2007 (000 heads)



Source: Department of Statistics, 2007

since 1998 although there has been a decline in 2005-2006 (although, once again, this may be a statistical anomaly). Unlike for sheep, however, goat numbers are more evenly spread across all regions of the country with all but one having between 12,000 and 19,000 head.

Within Kakheti there are two dominant producing municipalities, Sagarejo with just under 30% of all sheep/goat numbers and production in the region and Akhmeta with nearly 25% (see Figures 2.42 and 2.43).

Table 2.32 reflects an index which compares municipal productivity in Kakheti for mutton and goat meat as a percent of national productivity. Interestingly, unlike many other agricultural products and in spite of the fact that Kakheti is the major sheep producing region in the country, for all municipalities but one, the productivity index is below the national average. In fact for the region as a whole, productivity is only 80% of that for the nation. However, this variance may be caused by a different approach to the management of flocks between Kakheti

and the rest of the country. In Kakheti there is a more widespread tradition of milk production from sheep. Thus, more animals may be kept longer for milk production than they might be in other regions. This means there would be on average less meat production in relation to the overall number of animals being kept.

It should be noted that, similar to many areas of Georgia, due to harsh natural conditions, there is little veterinary control in the region. Until that can be effectively addressed, most veterinary control is probably best done at the point of slaughter.

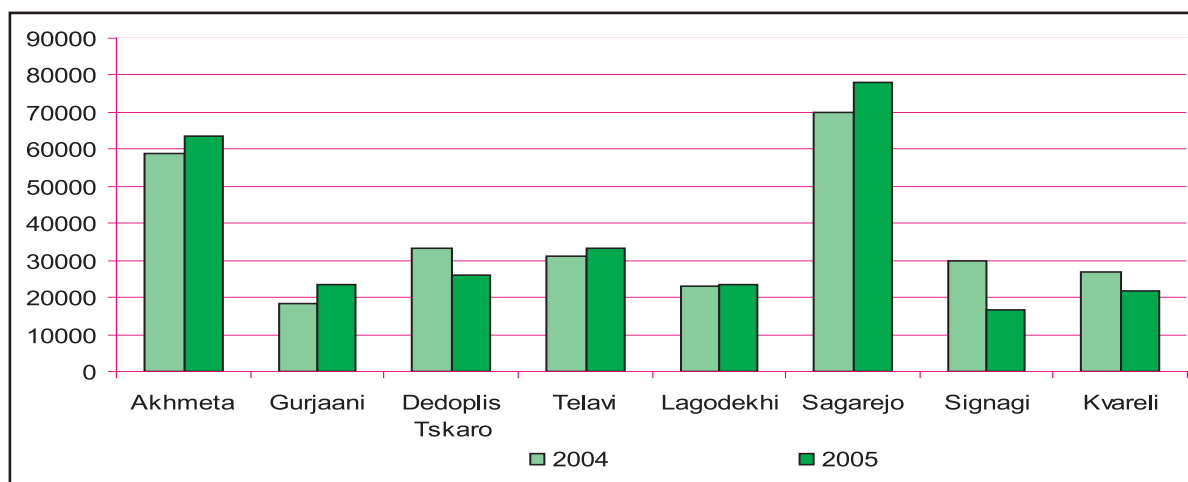
While according to the above productivity index, Kakheti is only 80% of the national average for mutton and goat meat production, for certain other indices (litters/100 females and average clip per sheep), the region fares much better as seen in the following data (see Table 2.33). Thus, in these two non-meat productivity categories, Kakheti is closer to the national norm.

Table 2.31: Sheep Numbers and Production: Kakheti vs. Georgia, 1999-2007

Index	Kakheti	Georgia	Kakheti % of Nation
Sheep (000 head)	252.0	626.0	40%
Goats (000 head)	13.0	91.0	14%
Sheep/Goat Meat (000 t)	2.3	6.9	34%
Wool (000 t)	0.7	2.0	37%

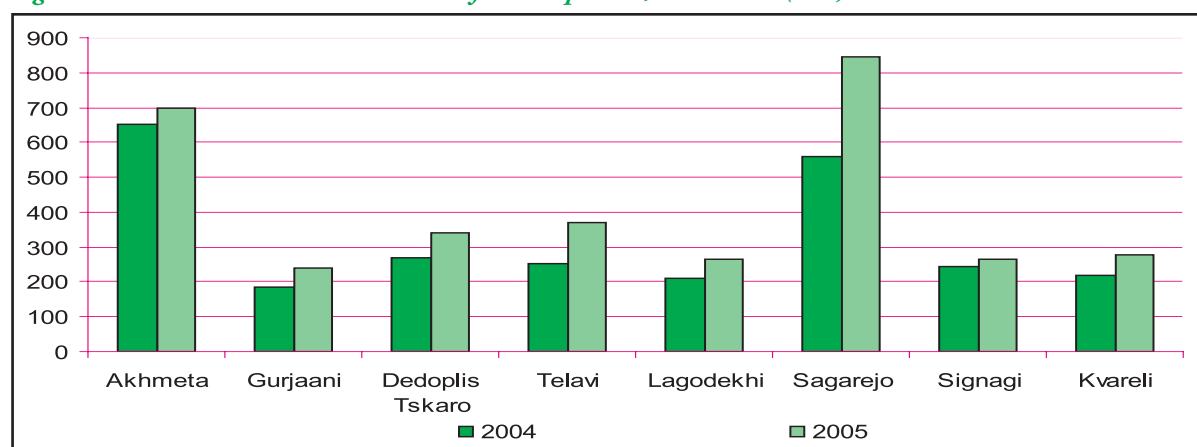
Source: Department of Statistics, 2007

Figure 2.42: Kakheti Sheep and Goat Numbers by Municipalities, 2004-2005 (head)



Source: Department of Statistics, 2005

Figure 2.43: Kakheti Mutton Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005

Table 2.32: Mutton/Goat Meat Productivity: Kakheti vs. Nation, 2005

Mutton/Goat Meat Productivity (% of National Average)	
Kakheti	81.63
Lagodekhi	103.94
Gurjaani	94.81
Telavi	94.23
Signagi	92.17
Kvareli	88.96
Dedoplistskaro	86.90
Akhmeta	67.76
Sagarejo	66.27

Source: Department of Statistics, 2005

Table 2.33: Mutton and Goat Production: Kakheti vs. Georgia, 1999-2007

Index	Kakheti	Georgia	Kakheti % of Nation
Litters (Kids/Lambs)/100 Females	108.00	111.00	97%
Average Clip/Sheep (kg/year)	2.86	2.92	98%

Source: Department of Agriculture, 2007

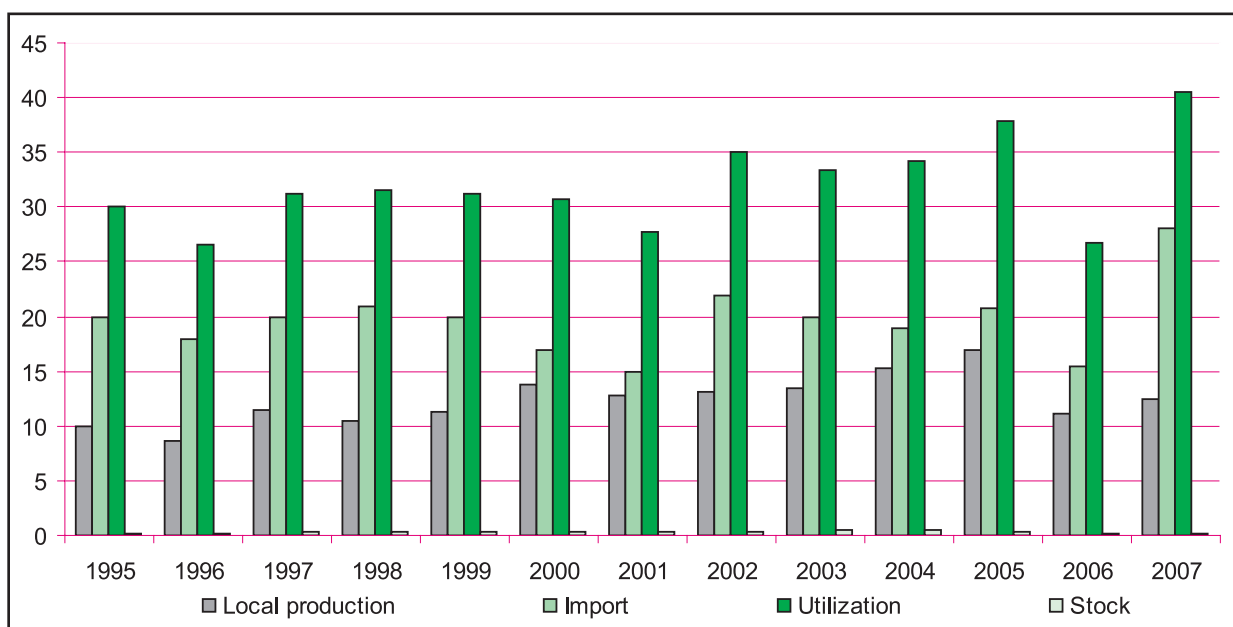
2.5.4 Poultry

In Georgia, eggs and poultry meat are popular food products, so much so that domestic production has not met national demand. This has especially been the case with respect to poultry meat. While domestic production increased by approximately two-thirds between 1995 and 2005 (before falling due to the Avian Influenza scare [Note: Avian Influenza was found in several of Georgia's neighbors as well as at one location in Georgia itself), imports held steady at 15,000-20,000 tons of poultry meat per year for the 1999-2006 period and supplied nearly 60% of domestic consumption (see Figures 2.44 and 2.45). In 2007, however, there was a sharp increase in imports to approximately 27,500 tons at the same time domestic production was beginning to increase. This was felt to be possible from pent-up demand after the declines in consumption associated with fears associated with the Avian Influenza scare.

While imports are not as predominate, there have been similar trends in egg supply and consumption. Domestic supply increased by approximately 60% during the 1995-2005 period (before also fell precipitously in 2006 due to the Avian Influenza scare but also possibly because of the statistical anomaly of the new data collection methodology), but imports stayed relatively constant at 200-300 million units per year (see Figures 2.45). Essentially, during that period, until Avian Influenza surfaced, domestic production of poultry meat and eggs, while not able to significantly reduce imports, was able to keep pace with expanded demand from any population expansion and the growth in per capita consumption.

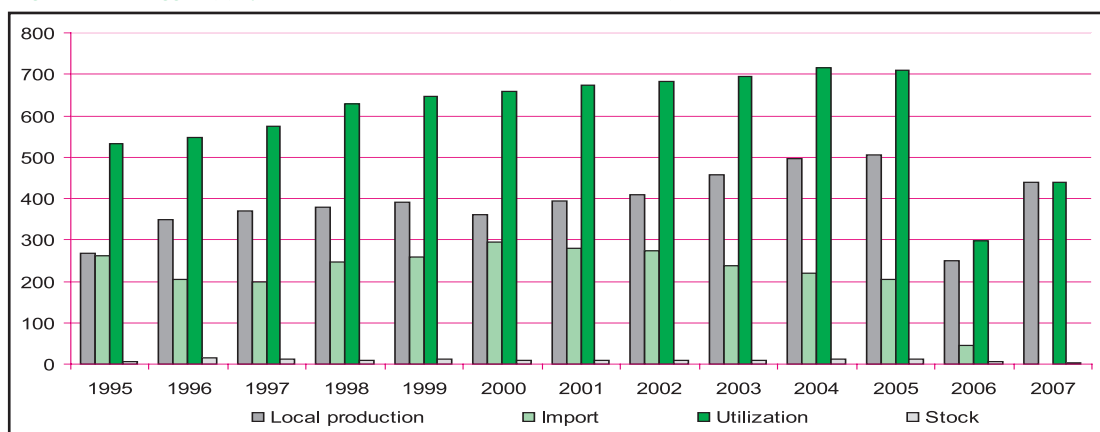
However, in 2006, egg imports essentially fell to zero and did not recover at all in 2007. However, there was a major increase in the domestic production of eggs between the two years. This may indicate that in the future, the domestic Georgian poultry industry may be able to continue to supply all of the country's demand for eggs.

Figure 2.44: Poultry Meat Supply and Utilization, 1995-2007 (000 t)



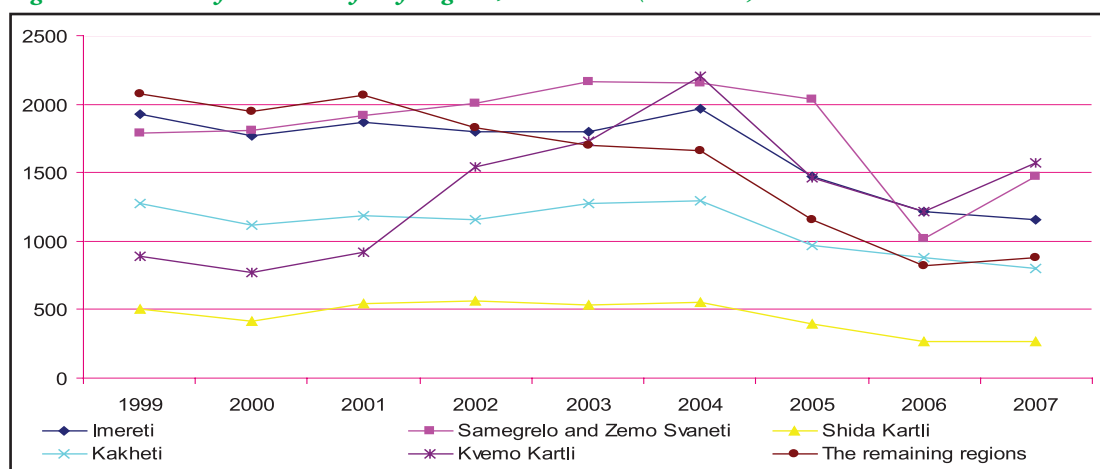
Source: Department of Statistics, 2007

Figure 2.45: Egg Supply and Utilization, 1995-2007 (million pieces)



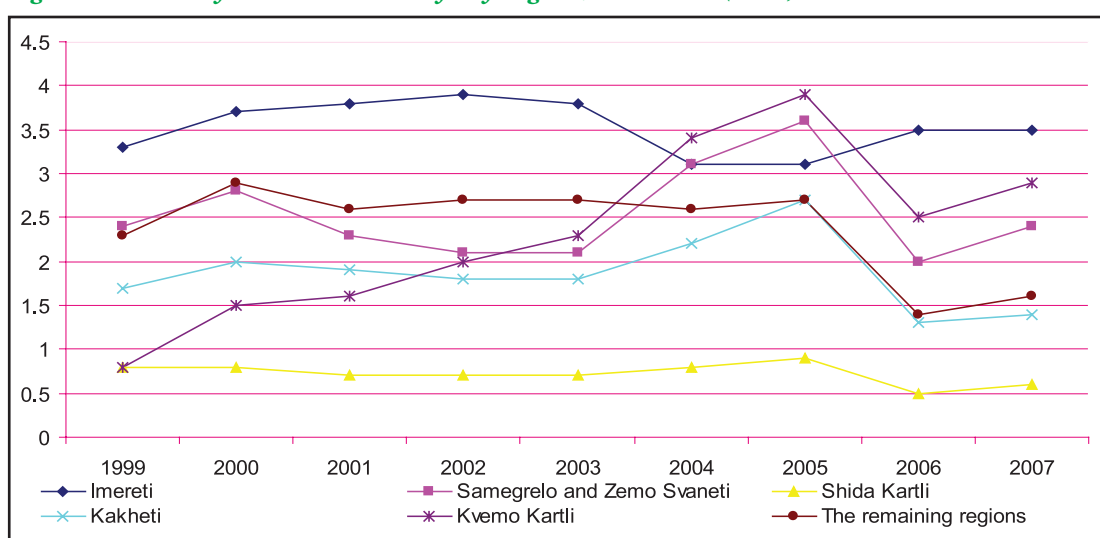
Source: Department of Statistics, 2007

Figure 2.46: Poultry Numbers by Key Regions, 1999-2007 (000 units)



Source: Department of Statistics, 2007

Figure 2.47: Poultry Meat Production by Key Regions, 1999-2007 (000 t)



Source: Department of Statistics, 2007

While poultry production is important in Kakheti, this region is only the fourth largest in Georgia after Imereti, Samegrelo, and Kvemo Kartli. While some growth has occurred in Kakheti over the past 8-10 years in both numbers and production, the most significant increase has occurred in Kvemo Kartli, which has now overtaken Imereti as the most important poultry region in the country (see Figures 2.46, 2.47, and 2.48.) Although Kakheti is only the fourth most important region with respect to poultry numbers and meat production, it is now the second largest producer of eggs after Kvemo Kartli. While traditionally and even today, most farms in Georgia have small poultry flocks and account for most national production, most growth in production is occurring on medium-to-large scale (for Georgia) commercial farms.

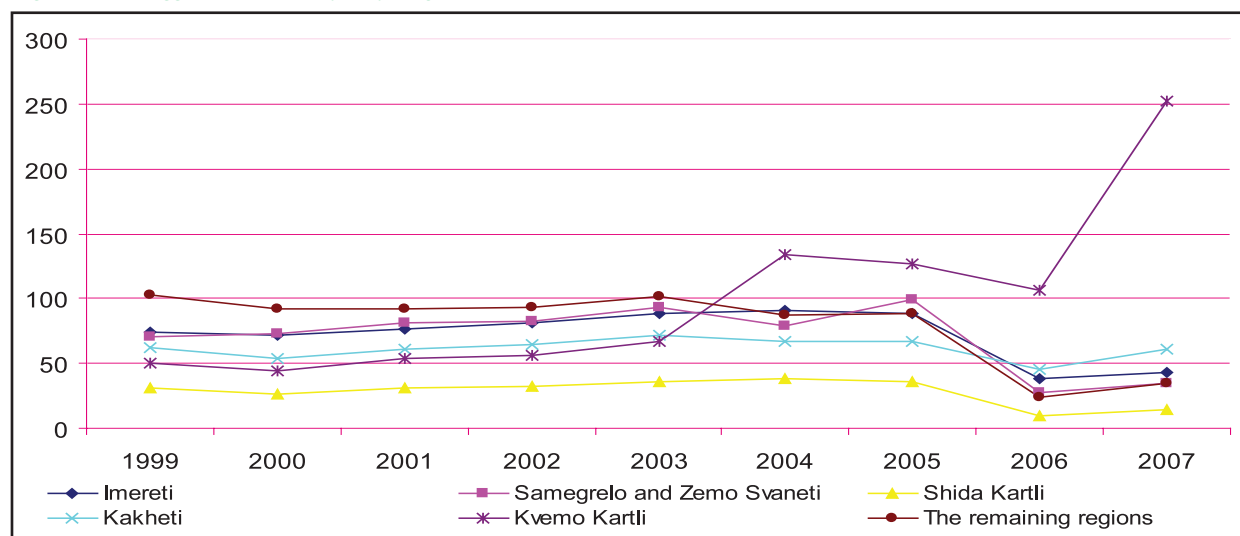
Although not exclusively, the location of grain production (especially corn) can define where poultry production occurs in Georgia. However, large amounts of poultry feed and feed ingredients are imported from Ukraine and other countries which can mitigate to some degree this locational effect of domestic grain production. Of course,

the reverse is also happening. The existence of larger scale poultry production in a region can stimulate the local production of feed ingredients which can in turn result in the construction of feed mills. Interestingly, Georgia has become a net exporter of poultry feed as it now supplies to some degree the Armenian poultry industry. This added volume has helped Georgian feed mills become more competitive and efficient.

The following data reflects how Kakheti's poultry numbers are broken down between all chickens, layers, turkeys, and ducks/geese as well as their percentage of the national flocks for these poultry types. While Kakheti is not the major poultry region in Georgia, in both chickens and turkeys, its numbers as a percent of national totals are greater than its population as a percent of the total Georgian population (just over 9%). However, with 15.8% of the country's farms, except for all chickens, Kakheti either has fewer farms with poultry or small numbers per farm.

Within Kakheti, Sagarejo is the major poultry meat producing municipality with nearly 600 tons in 2005, four

Figure 2.48: Egg Production by Key Regions, 1999-2007 (million units)



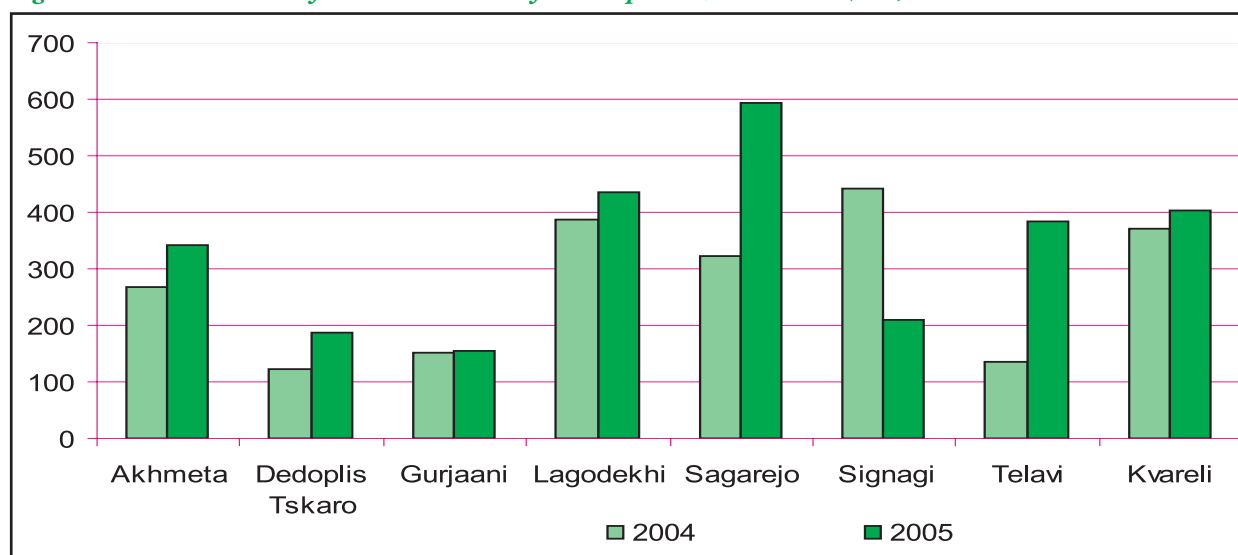
Source: Department of Statistics, 2007

Table 2.34: Poultry Production: Kakheti vs. Georgia, 2006

Index	Kakheti	Georgia	Kakheti % of Nation
Chickens: All	861.00	5 150.00	17%
Layers	537.70	3 721.30	14%
Turkeys	10.80	94.00	11%
Ducks and Geese	7.10	87.50	8%

Source: Department of Statistics, 2006

Figure 2.49: Kakheti Poultry Meat Production by Municipalities, 2004-2005 (tons)



Source: Department of Statistics, 2005.

Table 2.35: Egg and Poultry Meat Productivity: Kakheti vs. Nation, 2005

Egg and Poultry Meat Productivity (as % of National Average)			
Egg		Poultry Meat	
Kakheti	133.46	Kakheti	106.12
Gurjaani	152.77	Gurjaani	141.94
Dedoplis Tskaro	145.31	Signagi	127.92
Signagi	144.37	Akhmeta	111.53
Kvareli	144.12	Lagodekhi	106.02
Lagodekhi	136.94	Dedoplis Tskaro	102.51
Telavi	125.36	Telavi	102.04
Akhmeta	121.78	Sagarejo	96.42
Sagarejo	114.70	Kvareli	85.19

Source: Department of Statistics, 2005

other municipalities (Lagodekhi, Kvareli, Telavi, Akhmeta) are not far behind with production levels ranging from around 340 to 435 tons annually (see Figure 2.49). With respect to egg production, Patardzeuli has the largest production and packing operation.

Table 2.35 reflects an index which compares municipality by municipality productivity in Kakheti as a percent of national productivity. Interestingly, all municipalities have higher productivity than the national average for eggs with Kakheti as a whole being nearly one-third higher than for the nation. Gurjaani has the highest productivity being more than 50% greater than the national average while

three other municipalities (Dedoplis Tskaro, Signagi, Kvareli) are more than 40% greater.

While not as significant as for eggs, a somewhat similar situation is found for poultry meat where six of Kakheti's eight municipalities have higher productivity indices than the national average. Again, Gurjaani is the most productive with an index nearly 42% higher than Georgia as a whole followed by Signagi and Akhmeta. Even the two municipalities which are below the national average (Sagarejo, Kvareli) still have indices not that much lower than the nation as a whole (96 and 85 respectively).

In summary, both poultry meat and eggs are felt to offer opportunities in Kakheti for larger scale commercial production as the national market continues to recover from the Avian Influenza scare and increases in per capita incomes increase overall demand in the medium to longer term. Additionally, there is an opportunity in the country for entry into the production of hatching eggs which have traditionally been imported. The USAID AgVANTAGE project has conducted a feasibility assessment of this business. That data is available upon request. Additionally, there is the potential for investor assistance from the project, both financially and from a technical assistance standpoint.

1.4.5 Bee Keeping

Bee keeping has a long tradition in Georgia, from its early history until the present. In more recent years, Georgian mountain honey has found attractive niche markets at high prices in Western Europe. Because of these new found markets as well as domestic demand, national production of honey has increased by over 60% between 2000-2007. This increase has occurred as the result in the increase in the number of hives, from just under 100,000 nationally in 1999 to over 180,000 hives in 2007.

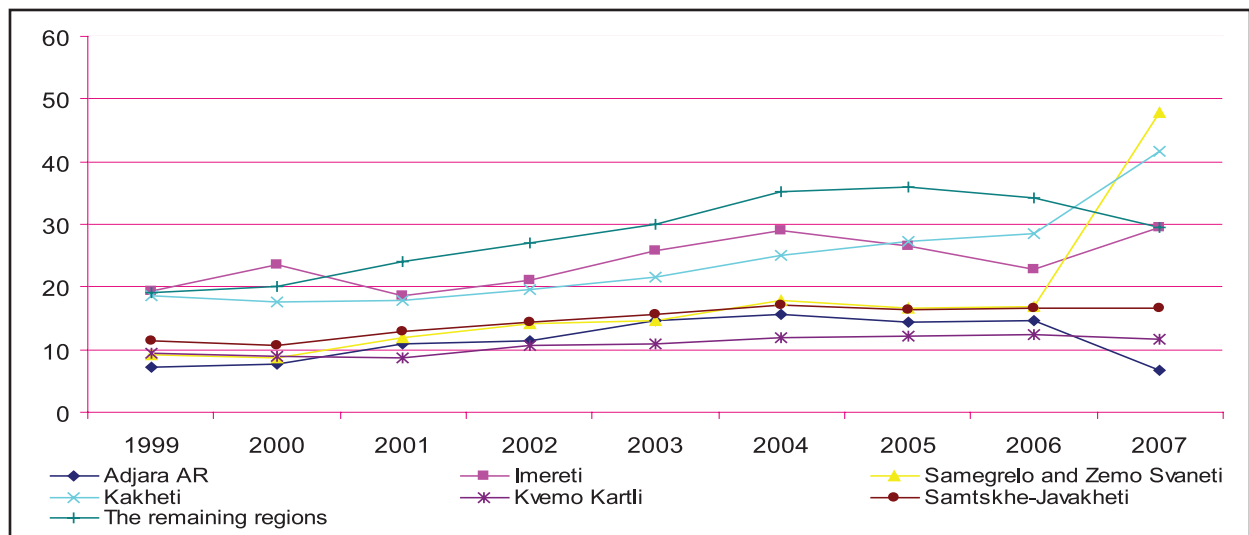
Prior to 2007, either Kakheti or Imereti had been the largest producing region in the country with the former

either being tied for or holding leadership since 1999. (Note: In 2007, Samegrelo/Zemo Svaneti had the most hives for the first time ever. However, since its honey production did not seem to increase proportionately, this may be a statistical anomaly.)

Typically Kakheti has generated approximately 20-25% of the total national production of honey. As Kakheti has only 16-20% of the total number of hives found in Georgia, its productivity per hive is greater than the national average (see Figures 2.50 and 2.51). This is due both to the range of flowering tree, fruit, vegetable, and other crops grown in the region and to the preponderance of flowers found in Kakheti's fields and woods which provide an abundant food source for bees.

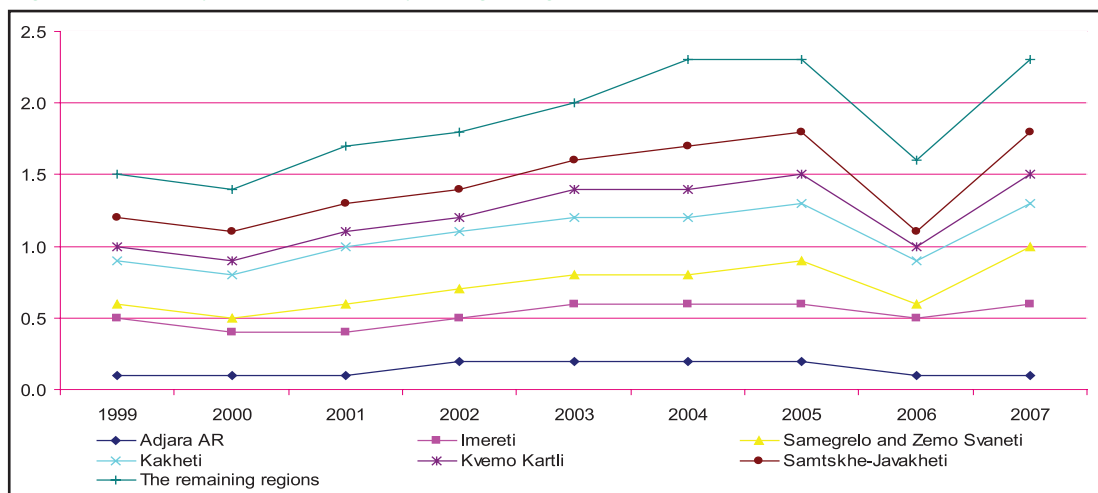
Within Kakheti, the municipality of Kvareli has by far the largest number of hives and saw the greatest increase in the number of hives in the 2003-2005 period. While it also is the place with the greatest level of honey production in the region, it is not as dominant in this respect with Gurjaani having nearly as much production with significantly fewer hives. While five municipalities in Kakheti saw increases in both hive numbers and production in the 2003-2005 period, three municipalities (Akhmeta, Signagi, Telavi) experienced a decline in both (see Figures 2.52 and 2.53).

Figure 2.50: Bee Hives in Key Georgia Regions, 1999-2007 (000)



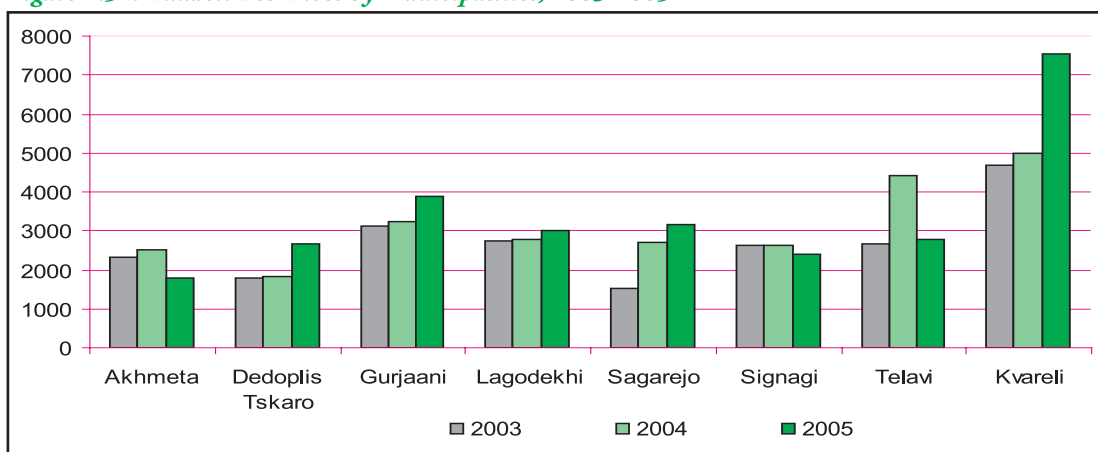
Source: Department of Statistics, 2007

Figure 2.51: Honey Production in Key Georgia Regions, 1999-2007 (000 t)



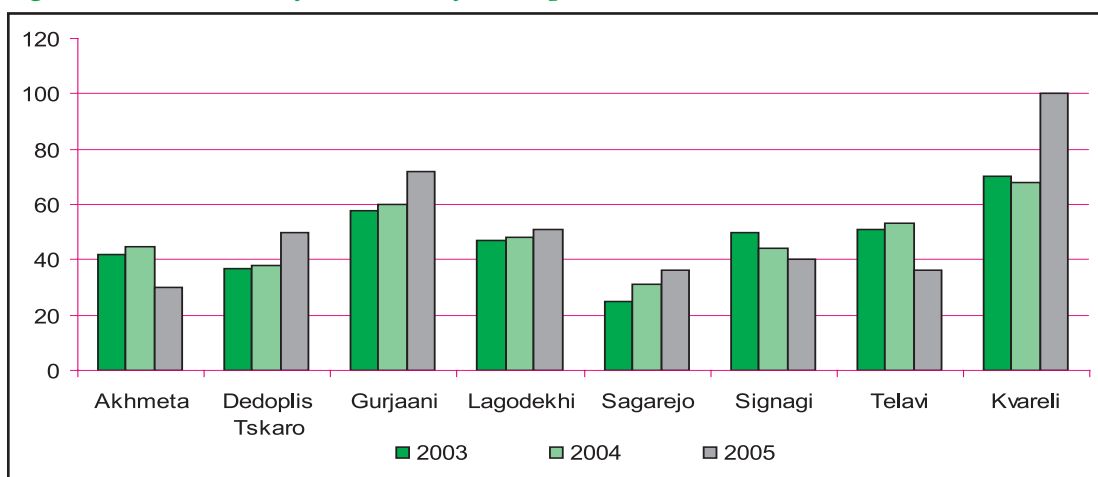
Source: Department of Statistics, 2007

Figure 2.52: Kakheti Bee Hives by Municipalities, 2003-2005



Source: Department of Statistics, 2005.

Figure 2.53: Kakheti Honey Production by Municipalities, 2003-2005 (tons)



Source: Department of Statistics, 2005.

CHAPTER 3. GRAPES AND WINE PRODUCTION IN KAKHETI

1.0 General Review of the Sector

The food and agricultural sector is an extremely important part of the Georgian economy. It employs roughly half of the nation's work force and at times over the past decade has comprised more than 20% of GDP. Within this sector, wine and its associated grape production is one of the leading in not most important agricultural products, especially for export. Until recently wine represented 8-10% of Georgian exports, the largest category for any product actually produced in the country. (Other exports were higher but these were items like scrap metal whose supply will eventually be depleted.)

Not only has grape and wine production been important in recent times, it has a long and distinguished history in Georgia and has existed and been important even before there was a Georgian nation. "Fossilized grape leaves, stem pieces and seeds unearthed from Miocene deposits in the Akhaltsikhe district of Georgia are found in the Bronze-age tombs, and other paleobotanical and archaeological data indicate the long existence and wide distribution of the vine in Georgia. In Mtskheta, Lokhida, Trialeti, Dzegvi, Vani, Tskhinvali and Alazani Valley archaeologists unearthed wine presses cut in boulders, all sorts of wine containers made of clay and metal which attested that wine-making was practiced there in the 3rd and 2nd millennium BC." In fact academicians have suggested that Georgia may be the place of origin of viticulture. (Note: The preceding and the data in the following paragraph are from the book, "Georgian Wine," published in 1989)

During Soviet times, Georgian wine held the largest share of the market in the former USSR. During that period, there were more than 40 wineries and other grape-based alcoholic beverage facilities in the country. Products produced included more than 100 brands of wine including nearly 60 high quality vintages and table wines, fortified and dessert wines, natural semi-sweet and semi-dry wines, 15 brands of sparkling wines, 11 brands of vintage and ordinary brandies, and a large spectrum of liqueurs and alcohol-free drinks based on natural grape juice. However, Georgia's wine was not well-known internationally due to the generally closed boundaries of the Soviet economy and the ability to sell all production within that closed economy. Yet even after the collapse of the Soviet Union,

Russia remained Georgia's dominant market outlet and absorbed as much as 93% of all exported wine.

This continued dependence on Russia had significant short term benefits, especially as Georgia was trying to transition from a centrally directed economy to a market oriented one. However, it violated a basic business principle: If at all possible, a company, industry, or country should never become overly dependent on a single supplier or single market. Thus, at the beginning of 2006 when Russia imposed an embargo on all Georgian wine, the Georgian industry and those farmers who supplied grapes for wine were severely and negatively affected. The industry has still not fully recovered from this shock although it is making efforts to do so.

In 2004, based on an FAO report ("Proposed Action Plan for the Protection of Georgian Wine Appellations"), there were 162 officially registered companies of all sizes which together processed approximately 16% of Georgia's total grape production. Perhaps three times this volume was processed into wine by small vineyard owners and those residents in cities and towns who purchased grapes for making their own wine at home. It is expected that the percentage processed by officially registered companies increased significantly in 2005 when exports of wine nearly doubled. In 2004, 62 companies exported wine from Georgia with 10 of these controlling 95% of the volume.

The FAO report goes on to state that the estimated per capita consumption in Georgia is approximately 15 liters annually. Based on this, the total domestic market in 2004 was thought to be nearly 68 million liters. With exports that year at something over 21 million liters, total wine production in Georgia was estimated at almost 90 million liters. This would have represented only 0.4% of world supply. With the more than doubling of wine exports in 2005 to over 44 million liters, Georgian wine production easily would have exceeded 110 million liters.

With the Russian wine embargo going into effect in the spring of 2006, most exports came to a grinding halt. As seen in Table 3.1, the number of bottles exported declined by nearly 40 million between 2005 and 2007, or approximately two-thirds. If exports to Russia had not been possible in the first quarter of 2006, the decline would have been by nearly 50 million bottles, or just under 38 million

Table 3.1: Georgian Wine Exports: 2005-2008 (millions)

<i>Year</i>	<i>Bottles</i>	<i>Liters</i>
2005	59.3	44.5
2006	19.5	14.6
2007	10.2	7.6
2008	12.2	9.1

Source: *Samtrest*

liters. This is evident in the 2007-8 data even though major efforts had been made to find new foreign markets. Thus, today total wine production in Georgia is likely less than the approximately 90 million liters produced in 2004.

While wine is the primary grape-based alcoholic product exported from Georgia, there are others as well. These include brandy, chacha (grappa), and wine-based alcohol. Table 3.2 reflects what has occurred with the exports of all these products (wine, brandy, chacha, and wine-based alcohol) for the 2007-2008 period.

wine (which are now significantly more expensive in Ukraine currency) are expected to decline to below 2005 levels. Second, the world economy is now in recession. Many of those countries to which Georgia had hoped to increase exports are now facing rising unemployment, contracting economies, and consumers who are becoming ever more cautious in their purchasing decisions. None of these are positive for a new supplier of a somewhat luxury item like wine.

Nonetheless, there have been some positive occurrences, especially in the United States after a decline in volume

Table 3.2: Grape-Based Volumes of Exports, 2007-2008 years (bottles)

<i>Description</i>	<i>2 007</i>	<i>2 008</i>
Wine, 0.75 lit.	11 108 157	12 192 475
Brandy, 0.50 lit.	2 614 835	2 939 385
Husks of grapes (Chacha), 0.50 lit.	94 210	40 221
Grape-Based Alcohol Raw Material, 1.00 lit.	1 729 753	950 620

Source: *Samtrest*

Table 3.3 reflects the major export markets for Georgia's grape-based alcoholic products. After Russia, Ukraine has been the second most important market for Georgian wine. Within Ukraine and Kazakhstan major market growth was realized between 2005 and 2007 as the country's export initiatives began to prove effective. During that two year period, total volume to these two countries increased over 100%, from 2.38 million liters to 5.26 million with Ukraine representing about 80% of this. While this was not overly significant in comparison to the lost volume to Russia, it was an indication that over time, Georgia may be able to diversify its export markets and eventually achieve volumes that approach or hopefully even exceed pre-embargo levels.

Unfortunately, Georgia now faces two other daunting challenges with respect to its ability to expand wine exports significantly or even maintain its recent somewhat low levels of export volumes. First, the ongoing and severe weakening of Ukraine's currency means that its purchases of Georgian

shipped to that country in the 2005-7 period. With the assistance of the USAID AgVANTAGE project, some new U.S. buyers of Georgian wine have been found. (Perhaps the most potentially important of these is the upscale supermarket chain, Whole Foods.) Presently, three Georgian wine companies are shipping a container of 25,000 bottles monthly to Washington State. Wines being marketed are at two price points: US\$8-12 and US\$18-22 per bottle. There are now plans to expand this to two other states in the near future. While these volumes are not large, they again indicate the potential for exporting Georgian wine in the future as the world economy improves and targeted foreign markets are better understood (e.g., within the U.S., each state sets its own regulatory guidelines for the marketing of alcoholic beverages).

Thus, today, the Georgian wine industry is struggling to adapt to a radically different world than the one in which it operated prior to 2006. The challenges it faces include:

CHAPTER 3. GRAPES AND WINE
PRODUCTION IN KAKHETI

Table 3.3: Georgian Wine Exports, 2005 - 2007 years

#	Country	Wine			Wine Materials			Brandy			Chacha (Grappa)		
		2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
CIS Countries													
1	Russia	3,925,212	814,281	0	0	0	0	193,422	59,975	0	40,321	3,943	0
2	Ukraine	218,582	304,240	412,276	0	0	5,500	24,904	41,792	1,475,354	950	396	19,975
3	Belarus	6,460	45,375	41,080	0	0	5,576	13,360	4,852	101,452	0	0	27,792
4	Latvia	17,088	43,216	40,721	0	0	2,298	4,352	1,632	47,074	13	314	4,724
5	Lithuania	12,157	8,534	10,277	0	0	0	0	25	0	0	0	0
6	Estonia	6,505	10,901	10,109	0	0	0	0	0	0	0	0	0
7	Kazakhstan	29,169	115,955	113,501	0	0	0	3,232	39,256	112,236	0	480	22,392
8	Kyrgyzstan	494	0	0	0	0	0	0	0	0	0	0	0
9	Tajikistan	245	754	1,216	0	0	0	0	14	1,380	0	0	0
10	Turkmenistan	2,250	752	0	0	0	0	0	0	0	0	0	0
11	Uzbekistan	0	0	3,326	0	0	0	0	0	0	0	0	0
12	Azerbaijan	3,065	9,821	3,402	0	0	55,604	0	12,094	502,200	0	9	0
13	Armenia	2,757	0	455	0	0	1,238	0	0	0	0	9	0
14	Moldova	0	545	0	0	0	0	0	0	0	0	0	0
	Total/Dalis/*	4,223,984	1,354,374	636,363	0	0	70,216	239,270	159,640	0	41,284	5,151	0
	Total/Bottles	5,6319,787	18,058,307	8,484,835	0	0	0	0	3,192,798	2,239,696	0	0	74,883
EU Countries													
15	France	3,626	15	1,654	0	0	0	0	2	0	0	0	656
16	Germany	10,352	4,420	9,136	0	0	0	0	30	138	12	226	240
17	Italy	0	45	216	0	0	0	0	0	0	0	0	0
18	United Kingdom	7,014	5877	3,295	0	0	0	0	0	0	0	5	0
19	Denmark	68	54	0	0	0	0	0	0	0	0	0	0
20	Netherlands	3,173	992	2,655	0	0	0	0	0	0	0	2	0
21	Belgium	678	2,759	632	0	0	0	0	0	0	0	0	108
22	Sweden	972	0	393	0	0	0	0	0	0	0	0	0
23	Switzerland	0	1,030	764	0	0	0	0	0	0	0	0	0
24	Ireland	0	1,054	2,907	0	0	0	0	0	0	0	0	0
25	Spain	0	0	1,272	0	0	0	0	0	0	0	0	0
26	Austria	0	198	0	0	0	0	0	0	0	0	0	0
27	Scotland	0	0	224	0	0	0	0	0	0	0	0	0
28	Finland	0	990	833	0	0	0	0	0	700	0	0	960
29	Bulgaria	77	140	378	0	0	64,000	0	0	0	0	0	0
30	Poland	11,692	19,170	26,629	0	0	0	0	0	21,992	354	0	0
31	Hungary	452	0	0	0	0	0	0	0	0	0	0	0
32	Czech Republic	2,500	2,021	5,501	0	0	4,600	325	658	35,676	0	38	0
33	Romania	532	0	0	0	0	0	0	0	0	0	0	0
34	Slovak Republic	227	0	1	0	0	0	0	0	0	0	0	0
35	Slovenia	0	0	29	0	0	0	0	0	384	0	0	0
36	Greece	921	86	548	0	0	0	0	0	0	0	0	0
37	Portugal	2	0	0	0	0	0	0	0	0	0	0	0
38	Cyprus	2,018	1,974	0	0	0	0	0	0	0	0	0	0
39	Turkey	2,887	165	792	0	0	0	0	0	0	0	0	0

CHAPTER 3. GRAPES AND WINE
PRODUCTION IN KAKHETI

	Total/Dalis	47,191	40,990	57,859	0	0	68,600	325	690	0	366	271	0
	Total/Bottles	629,213	546,537	771,452	0	0	0	0	0	58,890	0	0	1,964
Central Asian Countries													
40	Israel	8,559	7,536	9,026	0	0	0	0	0	11,684	30	126	13,335
41	UAE	0	690	1,545	0	0	0	0	0	0	0	0	0
	Total/Dalis	8559	8,226	10,571	0	0	0	0	0	0	30	126	0
	Total/Bottles	114,120	109,677	140,949	0	0	0	0	0	11,684	0	0	13,335
East Asian Countries													
42	China	2,813	5,472	8,794	0	0	0	919	0	0	7,343	0	0
43	Japan	3,905	4,970	2,581	0	0	0	0	5	0	0	2	0
44	South Korea	0	53	1,088	0	0	0	0	0	0	0	0	0
45	Korea	202	0	709	0	0	0	0	0	0	0	0	0
46	Mongolia	0	0	1,132	0	0	0	0	0	2,550	0	0	0
47	Taiwan	788	9	16	0	0	0	0	0	0	0	0	0
	Total/Dalis	7,708	10,504	14,320	0	0	0	919	5	0	7,343	2	0
	Total/Bottles	102,773	14,0053	190,925	0	0	0	0	0	2,550	0	0	0
North Americas													
48	USA	160,360	43,276	33,217	0	0	0	1,522	1,058	3,622	3	61	780
49	Canada	1,462	3,601	5,583	0	0	0	0	168	10,812	30	78	0
	Total/Dalis	161,822	46,877	38,800	0	0	0	1,522	1,226	0	33	139	0
	Total/Bottles	2,157,627	625,022	517,327	0	0	0	0	0	0	0	0	780
South America													
50	Panama	0	1,022	0	0	0	0	0	0	0	0	252	0
	Total/Dalis	0	1,022	0	0	0	0	0	0	0	0	252	0
	Total/Bottles	0	0	0	0	0	0	0	0	0	0	0	0
51	Duty-free/ Airport												
	Total/Dalis	0	0	3,717	0	0	0	0	0	0	0	0	0
	Total/Bottles	0	0	49,554	0	0	0	0	0	2,047	0	0	1,868
TOTAL EXPORTS													
	Total/Dalis	4,449,264	1,461,993	761,630	0	0	138,816	242,036	161,561	0	49,056	5,941	0
	Total/Bottles	59,323,520	19,493,219	10,155,042	0	0	0	3,227,147	2,873,746	2,329,301	0	80,931	92,830

Note: * Dali-10 litres

Source: Administration of the Governor in Kakheti Region and Kakheti Regional Development Agency

- The absence of a national marketing strategy (either of government or the industry) which will allow Georgian wine to compete profitably in the global economy without Russia as a customer
- The difficulty of competing in potential export markets against established wine producing nations which currently provide product at all price points, low to high
- World wine production growing faster than demand
- The current world economic recession
- The need to shift from a mentality in Georgia that “the customer must adapt to the product produced and the price charged” to one where “the customer must be offered product he/she prefers at a price competitive with similar quality wines”
- Significantly different varietal, quality, taste, and food safety standards to those with which the Georgian industry was accustomed
- The widespread availability abroad of counterfeit Georgian wines from other former Soviet republics
- The periodic problems domestically with wine quality and counterfeiting
- The absence of marketing knowledge or established relationships in those countries which might be potential export markets of importance

Yet, in spite of these many challenges, the Georgian wine industry also has a number of factors in its favor which might help in a successful transition to the new market realities now faced. These include:

- A broad range of varieties not known in the West, some of which might be possibilities for profitable niche markets initially but eventually grow to more widespread consumption (as has happened for varieties from more recent entrants onto the world market)
- A relatively small industry comparatively whose total export volume need only be a minor component of world trade in order to be successful, e.g., all wine grape hectareage in Georgia constitutes only 30% of France's single wine producing region of Bordeaux
- A number of new wineries with the most modern wine production technologies and equipment
- Existing foreign winemakers and investment partners who have knowledge of and contacts within possible new foreign markets
- Available suitable land which can be planted to new varieties without displacing traditional ones for which there may still be demand
- Recent successes in penetrating or expanding new export markets, e.g., United States, Ukraine, Kazakhstan
- Government's commitment to reducing the impact of the Russian embargo on Georgian grape producers

Yet, whatever the challenges to and favorable conditions for the Georgian grape and wine industry, any success in this industry, to include any hopes of expanding export volumes, must begin with the cultivation of high quality vines in the vineyards and then to insure the quality of wine that is made available in world markets. To do this will require a range of long term activities which will be touched on in subsequent sections of this chapter.

2.0 Importance of Viticulture and the Wine Industry in Kakheti

While the grape and wine industry is important to Georgia as a whole, it is especially important within Kakheti. It has two zones—inner and outer Kakheti—and more than 25 microzones that have traditionally produced wines of appellation of origin, or AOCs (see below). Areas which tend to produce the best wines are located in the basin of the Alazani and Iori Rivers at 400-700 meters altitude. High quality, European-type white table wines are produced in Tsinandali, Napareuli, Gurjaani, Manavi, and other microzones from Rkatsiteli, Kakhuri Mtsvane, Khikhvi, Kisi, and other local varieties. Red dry table wines are produced in Teliani, Akhasheni,

Mukuzani, and other microzones from Saperavi. Naturally sweet wines are produced in the microzones of Akhasheni and Kindzmarauli.

Table wines were developed in Kakheti over the centuries with a special recipe where hard parts of the grape are involved in the fermentation process. Such wines are produced in special clay jars (amphoras, in Georgian – “qvevri”) placed in the ground to ensure constant temperature throughout the process. Wines produced in this way have high sugar concentration, phenolic extracts, tannin content, and a pleasant bouquet with rich flavor and taste.

Presently Kakheti viticulture is represented primarily by older vineyards established in the 1960s-1970s. These represent 89-90% of all Kakheti wine hectareage with newer plantings representing the balance. Rkatsiteli and Saperavi were the dominating varieties in the old vineyards from Soviet times when the focus was on quantity. This caused an almost complete elimination of famous Georgian varieties such as Kisi, Khikhvi, Mtsvane, and Mcvivana. The older vineyards tend to have lower yields, sometimes no more than 2.0-2.5 tons per hectare, and need urgent rehabilitation to increase productivity and improve quality.

Approximately two thirds of all vineyards in the country are found in the region, or approximately 34,700 hectares (see Table 3.4). Depending on the year, with the exception of 2002, from 45-55% of all grape production in Georgia comes from this region (see Figure 3.1). It has been estimated that approximately 70% of the entire workforce in Kakheti is employed at least part time in the production, processing, and marketing of grapes. The estimated 5,000 hectares of new vineyards planted in recent years have tended to be primarily Saperavi (96%) followed by older Georgian white varieties (Kisi, Khikhvi, and Kakhuri Mtsvane with 2.0-2.2%), and French varieties (Cabernet Franc and Sauvignon, Pinot Noire, Merlot, and Malbec with 1.8-2.3%). Assuming the development of a hectare of grapes costs in the US\$8,000-11,000 range, the value of these new investments in grapes is US\$40-55 million, a not insignificant amount.

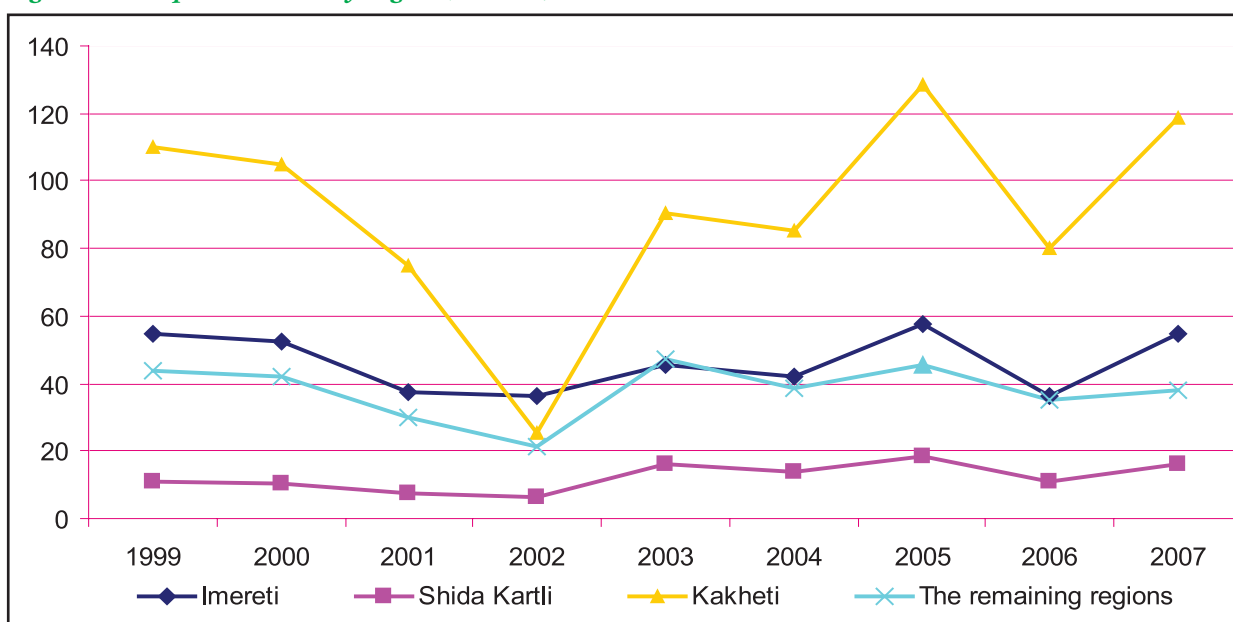
With respect to the broad range of agricultural commodities produced in Kakheti, grapes represent the largest single tonnage of those crops represented in Table 3.5. While melon production does exceed grapes in some municipalities, for the region as a whole, grape volume is almost 30% higher. Gurjaani is by far the major grape producing municipality in the region with over 39,000 tons with Telavi being a distant second at 17,000 tons. Four municipalities—Kvareli, Sagarejo, Signagi, and Dedoplistskaro—all produce in the 12-15,000 ton range.

Table 3.4: Total Vineyard Area by Region (ha)

Region Name	Thousand (ha)	Share (%)
Georgia	51.3	100.00 %
Imereti	8.9	17.35 %
Kakheti	34.7	67.65 %
Shida Kartli	1.9	3.70 %
Remaining Regions	5.8	11.30 %

Source: Department of Statistics, 2007

Figure 3.1: Grape Production by Region (000 tons)



Source: Department of Statistics, 2007

Table 3.5: Production of Leading Agriculture Products in Kakheti (tons)

Description	Grape	Melon	Potato	Vegetables	Sunflower	Wheat
Kakheti	128 355	99 618	17 293	59 273	21 920	96 616
Akhmeta	10 328	900	2 800	2 800	1 060	3 840
Gurjaani	39 005	11 100	3 120	13 420	6 540	3 900
Dedoplis Tskaro	12 410	1 600	500	400	6 800	35 354
Telavi	17 192	669	1 496	2 500	812	5 300
Lagodekhi	7 659	10 461	1 621	21 240	506	1 918
Sagarejo	13 689	16 508	2 545	1 656	2 035	13 389
Signagi	13 400	40 000	4 500	15 000	3 500	26 260
Kvareli	14 672	18 380	711	2 257	667	6 655

Source: Department of Statistics, 2005

In an attachment to this chapter, Kakheti wine enterprises are listed by each of the region's eight municipalities. These are the 58 companies presently officially registered with the government.

Table 3.6: Specific Viticulture Zones (AOCs) in Kakheti

#	Specific Zone (AOC)	Zone (AOC) Area (sq.km.)	Vineyard Area (ha)	AOC Varietal Area (ha)
1	Vazisubani	62	220	N/A
2	Kvareli	100	975	N/A
3	Kardenakhi	12	345	N/A
4	Teliani	11	60	N/A
5	Napareuli	52	180	N/A
6	Kotekhi	14	200	N/A
7	Tibaani	28	350	N/A
8	Akhasheni	N/A	203	112
9	Mukuzani	N/A	405	246
10	Kindzmarauli	N/A	2 281	1 633
11	Manavi	N/A	361	346
12	Gurjaani	N/A	N/A	1 151
13	Tsinandali	N/A	N/A	653
14	Kakheti	3 100	15 575	N/A

Source: Georgian Horticulture, Viticulture and Winemaking (Oenology) Institute, 2006

Table 3.7: Specific Viticulture Zones (AOCs) in Kakheti

#	Specific Zone (AOC)	AOC Varietal Area (ha)
1	Vazisubani	220
2	Kvareli	975
3	Kardenakhi	345
4	Teliani	60
5	Napareuli	180
6	Kotekhi	200
7	Tibaani	350
8	Akhasheni	112
9	Mukuzani	246
10	Kindzmarauli	614
11	Manavi	346
12	Gurjaani	1 151
13	Tsinandali	653
14	Kakheti	15 575

Source: Georgian Horticulture, Viticulture and Winemaking (Oenology) Institute, 2006

According to the Ministry of Agriculture data, in 2007, more than 200,000 tons of grapes were harvested. Of this 52,000 tons were processed by wineries; 110,000 tons were sold in Tbilisi or other regions of Georgia; and 50,000 were consumed and/or processed by local households.

Table 3.8: Yields of Specific Varietals in the AOCs of Kakheti

<i>AOC</i>	<i>Specific Varietal</i>	<i>Yield per Hectare (ton)</i>
Akhasheni Rg	Saperavi	10
Kardenakhi Bl	Rkatsiteli	12
	Khikhvi	6
	Kakhuri Mtsvane	8
Kotekhi Bl.	Rkatsiteli	12
Kotekhi Rg.	Saperavi	10
Mukuzani Rg	Saperavi	10
Kindzmarauli Rg	Saperavi	10
Teliani Rg	Cabernet Sauvignon	10
Tvishi Bl	Tsolikauri	10
Tsinandali Bl	Rkatsiteli	12
	Kakhuri Mtsvane	8
Kvareli Rg	Saperavi	10
Atenuri Bl	Chinuri	8
	Goruli Mtsvane	10
Gurjaani Bl	Rkatsiteli	12
	Kakhuri Mtsvane	8
Kakheti Bl	Rkatsiteli	12
	Kakhuri Mtsvane	8
Manavi BL	Kakhuri Mtsvane	8
	Rkatsiteli	10
Napareuli Bl.	Rkatsiteli	12
Napareuli Rg.	Saperavi	10
	Tsolikauri	10
	Tsitska	10
Sviri Bl	Krakhuna	8
	Rkatsiteli	12
Tibaani Bl	Rkatsiteli	12
Vazisubani Bl	Rkatsiteli	12
	Kakhuri Mtsvane	8
Khvanchkara Rg	Aleksandrouli	7
	Mujuretuli	8

Source: Ministry of Agriculture of Georgia

3.0 Viticulture Zones in Kakheti

Within Georgia there are 18 viticulture zones for wine established by law, 14 of which are in or include the entire region of Kakheti. These zones are referred to as Appellations of Origin, or AOCs (from the term used in France). Within Kakheti, there are 13 specific AOC sub-zones with Kakheti as a whole being the 14th. Table 3.6 lists these zones as well as certain related information as to the size of the zone, vineyard area within that zone, and/or the numbers of hectares of the appellation within the zone. The largest single AOC is that for Kindzmarauli with nearly 2,300 hectares of production area and over 1,600 hectares of its appellation varietal. (Note: “N/A” within the table indicates that the information was “not available.”) Interestingly, according to one source, while the overall demand for Georgian wines is down because of the Russian embargo, for appellation varietals, supply still roughly equals demand.

Table 3.8 reflects the yields which are considered acceptable for a range of varietals in the various AOCs of Kakheti. Saperavi is at the low end at 7-8 tons per hectare with Rkatsiteli being at the high end at 12 tons per hectare.

4.0 Key Industry Issues in Kakheti

The balance of this chapter is devoted to a discussion of the key issues facing grape production and wine making within Kakheti. Specifically, these address the following five areas:

- Analysis of conditions in existing vineyards
- Description of and perspectives on accepted wine varietals
- Summary of problems within Dedoplistskaro
- Observations related to table grape production
- Recommendations for improving this sector in Kakheti

4.1 Analysis of Conditions in Existing Vineyards

As referenced above, the imposition of the embargo on Georgian wine by the Russian government has negatively affected the domestic wine industry. While commercial wineries are struggling to continue to sell that volume which was previously sold in Russia, in many instances, they have the option of simply reducing their purchases of grapes from farmers in order to reduce costs although still incurring fixed costs. (Note: Over the past three seasons, government has pressured wineries to continue to buy grapes even when they have no market for the resulting

wine. This is discussed in more detail in Chapter 6.) Small farmers, on the other hand, who traditionally sold all or part of their grapes to these commercial wineries, may face an even worse situation. They still own their vineyards which keep producing. While these farmers may be able to reduce somewhat their use of purchased inputs, to neglect the care of their vines too extensively may mean they lose them entirely, vines which for the region as a whole are worth millions of GEL. Then, if and when markets do recover, these farmers will either miss that opportunity or be forced to reinvest significant money they do not have and/or which is expensive to borrow.

These small farmers face a number of additional problems. One of these is a growing trend in the wine industry for some commercial wineries to rely increasingly on their own grape production for raw material for their facilities. In this way these companies can better control the quality of grapes necessary to make wines competitive in today's markets. (See below for some of the problems associated with small farm production upon which wineries historically relied.) Additionally, by being vertically integrated, these enterprises have the potential to better control costs and improve profits. Of course, they are also assuming the need for significant additional capital as well as the risks associated with the production of any agricultural commodity, to include grapes. In today's embargo dominated environment, one of these risks is that wineries with their own vineyards actually face a somewhat similar situation to that of the small farmer—grape production for which there is no real demand. Yet, when all the risks and benefits have been weighed, overall this is the direction many commercial wineries seem to be moving, and they have generally been successful in securing the needed land from government.

As a consequence, the small farmer now faces a double drop in the demand for their output, first, from the Russian embargo and, second, from being displaced by grape production from commercial wineries. The solution to the latter problem on the surface might appear to be the creation of cooperatives. However, in the grape and wine industry, this is more complicated than when product is to be sold in its fresh or marginally processed form. Increasingly commercial wineries do not need the production of small farmers whether individually or as part of a cooperative. Thus, for a cooperative to be successful, it may ultimately have to have its own winery. For the winery to be successful, it must have not only skilled professionals for the production of wine but also the ability to market the wine in an increasingly competitive domestic and world market which is already facing a degree of oversupply

In spite of the growth in the production of their own raw material by commercial wine companies, production of grapes in Kakheti is still dominated overall by the small farmer. Based on data from the Department of Statistics, 20,551 of Kakheti's 22,227 hectares of grapes (93%) are produced on "household" farms. (The accuracy of this data is uncertain due to the absence of a cadastral survey of vineyards [see below for further discussion]. This is evident when these 22,227 hectares are compared to the reported 34,700 hectares of Kakhetian grapes as found in Table 3.4 above.) However, the vineyards of small farmers are often not profitable or even overly oriented to profit as most production is used by the farmer and his/her family. What is not utilized by the family (often to produce their own wine primarily for home use), the farmer tries to sell to the commercial wineries and/or to city residents who buy grapes to make their own wine at home.

Generally in Kakheti and the country as a whole, there has not been a strong link between what needs to happen on the farm, during harvest and transport, and at the processing facility. Part of this relates to quality issues but also to which grape varieties are produced. With respect to the latter, most Kakhetian farmers produce grapes intended for white wine. Much of this is of low quality or of varieties different than the markets may now be demanding and which generate the highest prices (often reds and reds not historically produced in Georgia).

Essentially, the root of the problem tends to be that small farmers and home wine producers are not truly aware of what is required to produce a high quality wine in today's markets. In fact many of these may feel that the wine they produce at home is among the best in Georgia. Thus, that being the case, the cultural and other practices they employ—if good enough to make their own "excellent" wine—should be good enough for the wine being produced at commercial wineries. While the preceding may be somewhat of an exaggeration, the fact remains that there has not been great progress in shifting small farmers from their traditional ways of producing, harvesting, and transporting to what is desired and needed by the quality oriented commercial wineries.

This is reflected in a most basic way in the fact that many small farmers are not sufficiently aware of even the proper procedures of how best to care for their current vines and prevent them from being harmed by disease and parasites much less the issues of proper harvest, handling, and varietal selection. All too frequently diseased seedlings are planted by the small farmer which then results in the growth of a diseased vine.

In time, these and similar production problems can be addressed through some sort of regional consultative group (government, private, or public-private) which can advise the small farmers and smaller, less sophisticated wineries. This is actually an area where a cooperative might be most beneficial, in helping produce a better quality grape of the right varieties. If this were successful, there might be a slowing of the trend towards vertical integration into production by the large commercial wineries.

While it has been stated that there has been a trend by commercial wineries away from purchase of raw material from small farmers, there are some wineries that have moved to establish stronger, more effective relationships with small farmers to improve the availability and quality of the grapes they buy. These commercial enterprises provide technical assistance to the small farmers and actually visit individual vineyards in advance of harvest to monitor production and quality. Additionally, these enterprises in some instances assist the small farmer in securing fertilizer and other inputs necessary to produce a quality crop. This assistance can be in cash or kind. If in cash and the small farmer does not then use the funds as specified, the winery will sever relationships with this farmer and only work with those in the future that performed as agreed. (Note: Since the embargo and the decline in the demand for wine grapes, there may have been some reduction in these types of relationships.)

From a more practical and immediate standpoint (any regional consultative group or the development of cooperatives will likely take time to be effectively put in place even if agreed to), the Georgian law on "vine and wine-making" amended in June 2007, required the mandatory certification of industrial, grafted, and basic vine seedlings. Certification will be required of all those entities or individuals that produce and/or sell seedlings and will be conducted by the relative institutions. At this time, such certification is still essentially voluntary although it needs to become mandatory as required by Georgian law. Presently both Samtrest and the Chamber of Commerce do some certification, but this needs to be better coordinated and managed correctly.

Certified seedlings should be free of disease, i.e., cannot carry different viral or bacterial diseases. As such, any vineyard planted with healthy seedlings will be longer lived, have greater yields, and produce higher quality grapes more suitable for quality wine production. In years past, in addition to the sale of diseased seedlings, seedlings sold were often not the varietal represented to the buyer. Thus, a farmer might purchase seedlings thinking they were

supposed to be Saperavi only to find out when the vines first bore fruit that some portion were actually another varietal, possibly even a white when they should have at least been a red. At this point, the farmer has already invested time and money in his vineyard, and it is difficult and generally not practical to remove these vines and replant.

Currently, the “Arivie-Georgia” nursery, jointly established by Georgian and foreign investors in Kondoli (Telavi municipality), is the only one in Georgia whose seedlings comply with European standards. Part of the seedlings produced is exported. This is a unique nursery, not only for Georgia, but in the entire South Caucasus, so that its current production not able to meet the demand for its seedlings. There are three more commercial nurseries in Kakheti and some household farms that produce seedlings. None of these are presently using the production technologies and practices that meet international standards and the needs of the domestic industry for high quality, disease-free, varietal-certain seedlings.

An additional problem faced by the industry at the production level is the absence of an accurate cadastral map of vineyards. In fact, this is one of the major regulatory challenges faced by government and the industry. It is the government’s responsibility to control and regulate wines according to their place of origin. Yet, it is impossible to define the boundaries of specific production zones without an accurate cadastral map reflecting which varietals are grown where under what conditions so that the unique characteristics associated with an appellation can be defined and regulated. Frequently, different varietals are grown in different zones yet that zone is unsuitable for that varietal. As a consequence, it is difficult if not impossible to define the ideal characteristics for a suitable varietal in a specific zone.

There is another regulatory problem related to the absence of accurate cadastral mapping of vineyards which relates to the potential for counterfeiting (also known as “falsification”). If it is not known how many hectares of a specific variety exist in a specific zone, regulators cannot have a sense of how much harvest is realistic for a specific appellation. Thus, it is easier for a farmer or winery to misrepresent the source of its grapes so that they can use other grapes to produce counterfeited wine in a brand that is more in demand.

There are actually two types of counterfeiting which are periodically found in Georgia. The first of these is the one just described in the preceding paragraph. The second is the adding of a small amount of actual wine to a larger base

of non-wine spirits (alcohol) to produce a product sold as a specific wine varietal with no indication that the product has been adulterated by non-wine products. This, too, is a problem for the Georgian wine industry which relates to the need for an accurate cadastral survey. It has been estimated by some that, if wine counterfeiting in Georgia can be totally eliminated, especially this second type, then Georgia’s current supply of grapes for wine should equal the demand for such grapes even in the face of the Russian embargo.

In light of the preceding, under the Georgian (and European) approach to regulation (versus, for example, that found in the United States), the geographic boundaries of specific zones should be clearly delineated and publicized, and the different species of vines and the number of each species and their hectares should be surveyed and recorded. As part of this system, the number of producing and newly planted/non-producing vines should also be recorded. It would also be worthwhile to survey those lands which would be suitable for planting specific varietals in specific zones. The possible use of aerial photography should be explored as a survey technique (either primary or secondary) for recording and better understanding the location, areas, and varietals in each of the various producing zones.

Once the various zones have been appropriately surveyed and mapped, each should be sequentially numbered from 01 to 14. When registering the vineyards and vineyard suitable lands of individual owners during this process, every owner should be provided a specific identification number to be used when selling grapes from those vineyards.

In the past, much of this work was performed by the Horticulture, Viticulture, and Oenology (Winemaking) Institute. However, since independence, this surveying and recording keeping has not been continued as continuously and as comprehensively as it should have been. Thus, today there is the need to do this work again and in a more comprehensive and qualified way which best supports Georgia’s ability to maintain the reputation of its wines and compete in world markets.

In many cases production zones can overlap one another. For example, the Gurjaani zone covers the Vazisubani zone (and, of course, the Kakheti zone covers all 13 other zones). There can be a difference in the grapes harvested from vines in these different zones from the same varietal that are mainly reflected in wine quality. Thus, in the example of these two overlapping zones, if a wine does not satisfy the relative wine quality requirements to be classified as Vazisubani, then it can be sold as a Gurjaani

wine. Unfortunately, presently there is no effective system in place to control the wine according to its origin to insure it is properly named based on its origin and characteristics. Therefore, it could still be sold as Vazisubani when it should not have been.

Presently there is only one control mechanism for regulating the origin of different wines. This mechanism is based on the 2007 Georgian law on “vine and wine-making”. The control is provided by a constantly operating tasting committee functioning as a service unit to the industry. While this committee is formally under Samtrest, it reports its findings directly to the Minister of Agriculture. This tasting committee has the responsibility to control the quality characteristics of a wine in order to be sold under a particular brand or appellation. At this time, the committee only tests wines which have already been bottled. However, it is felt by many that there should be a two stage testing process, initially in the barrels at the winery and then later when the product has been bottled. This does two things. First, it increases the confidence that any wine sold is what it is represented to be and, second, it gives the winery confidence that what it believes is a certain varietal actually is before going to the expense of bottling. Even though not required under the current regulatory process, currently there are wineries that do ask the tasting committee to test their wines while still in barrels.

In summary, the conduct of a comprehensive cadastral survey and mapping program will greatly assist in guaranteeing that wine sold under a particular label is actually that type wine. This will reduce the production of falsified wines in Georgia by helping ensure that only the quantity of qualified varietals produced in a zone receive the proper designation for that varietal and zone. This will help maintain better consistency of appellation characteristics in the marketplace which, in turn, should help with increasing sales of quality wines by Georgia.

4.2 Description of and Perspectives on Accepted Wine Varietals

Approximately 93% of vineyards in Kakheti are estimated to be held by small farms (i.e., household farms). As referenced earlier, the larger commercial wineries are increasingly turning away from the small farmer in order to produce their own raw material. One of the reasons is the unreliability of the varietals that the small farmer sells, especially for red wines. Sometimes this is because the small farmer does not honestly know the species (varietal) of the grape he sells. Other times, due to the demand for a varietal he does not have (such as Saperavi), he may knowingly sell

or try to sell his grapes as a varietal that they are not. This, along with those factors outlined in the preceding section, are the basis for the growing disinclination of commercial wineries to buy from small farmers.

As also described in the preceding section, government has the responsibility for controlling wine designations based on their zone of origin (AOC). Yet, according to Georgian legislation, there are other special types of wine, i.e., regional designations, which should also be regulated by government. As part of this oversight, it is necessary to develop an appropriate evaluation system, both locally and nationally, and identify professionals and groups who are competent and able to classify those varietals in these non-AOC specific regional zones. This will go far in helping address some of the problems highlighted in this and the previous section. Additionally, it will make it more obvious which undesirable species (varietals) might be replaced with more desirable ones given current and projected future market demand in both Georgia and internationally.

In Table 3.9, it is strikingly evident that Rkatsiteli is the varietal comprising the largest area of vineyards in Kakheti with nearly 18,000 hectares. This is followed by Saperavi with over 3,300 hectares. Cabernet Sauvignon is a more recent varietal to Georgia and is grown on only 195 hectares (in the Teliani area but not elsewhere in the region). Usakhelouri and red Izabela are grown on a very limited area (only 49 hectares [in Lechkhumi] for the former and only 80 hectares of the latter) and produced only by small farmers.

Red Pinot is grown on a limited area as well (99 hectares) mainly by small farmers who find it difficult to sell this grape to the commercial wineries. This is interesting since in the United States, the demand for red Pinots has increased significantly in recent years and commands often higher prices than Cabernet Sauvignons. Thus, it is felt that when the sourcing problem is resolved through proper zonal surveys, the export market recovers, and the small farmer learns better how to handle his production and harvesting, then there may well be a market for this varietal.

Five varietals (Chinese, Kisi, white Pinot, white Izabella, Georgian Tita) are all grown on 33 hectares or less and all essentially only by small farmers. The question can logically be asked whether these varietals are best suited to the Kakheti region, or whether they might offer a high value niche market for the industry. For example, one of the major Georgian wineries produces a high value wine (over GEL 50 [US\$30] per bottle retail) for two rare varietals where only 1000 bottles were produced from an entire year's production.

Table 3.9: Area of Vineyards in Kakheti by Varietal (ha)

<i>Description</i>	<i>All Farms</i>	<i>Agricultural Enterprises</i>	<i>Household Farms</i>
Saperavi	3 322	624	2 629
Cabernet Sauvignon	195	139	50
Pinot Red	99	0	99
Usakhelouri	49	0	49
Isabella Red	70	0	70
Rkatsiteli	17 776	536	17 050
Kakhuri Red	249	112	128
Pinot White	11	0	11
Chinese	33	0	33
Kisi	19	0	19
Georgian Tita	5	0	5
Isabella White	11	0	11
Other Varietals	365	0	365
Total	22 204	1 411	20 519

Source: Department of Statistics, 2005

While not as large as varieties like Rkatsiteli and Saperavi, Vakirula (included under Other Varietals) is also planted on a fairly significant area of land when compared with many of the other varieties. The demand for Vakirula is high in some years, but in the current environment, its profitable sale is problematic. This variety is primarily grown in the villages of Anaga, Vakiri, and Velistsikhe. In Lagodekhi this variety is better known under the name Shanidze.

Within the 365 hectares of Other Varietals, there are those which cannot be reliably determined. In the oversupply

situation in which Georgia now finds itself, these may be the most difficult grapes for which to find a market.

One of the most important issues facing the industry in Kakheti is the problem of hybrid varieties (species). There are many different hybrid species planted on a large area of land although their use for wine production is strictly forbidden. According to currently available data, hybrid species represent approximately 7-10% (depending on the statistical source) of the total vineyards in Kakheti, or 2,241 hectares (see Table 3.10). Within the region, Gurjaani

Table 3.10: Kakheti Vineyard and Hybrid Species Area by Municipalities, 2007 (ha)

<i>Municipality</i>	<i>All Vineyards</i>	<i>Hybrid Species</i>
Kakheti	31 437	2 241
Akhmeta	1 747	150
Telavi	3 903	463
Gurjaani	7 618	581
Dedoplistskaro	1 499	71
Lagodekhi	1 846	4
Sagarejo	3 949	250
Signagi	4 494	443
Kvareli	6 382	279

Source: Data from various municipal statistical sources as to registered vineyard areas, 2007

municipality has the greatest area of hybrids (581 hectares) although not the greatest percentage which is found in Telavi (12% of all hectareage). With this prevalence of hybrids, the legal restrictions on its use in wine, and its importance to farmers given their current investment, this is a problem which needs to be effectively addressed.

The following two tables (3.11 and 3.12) reflect various initiatives (government, private) to cut down and/or replace old, diseased, or hybrid species vineyards. Much of the removal of vineyards seems to be happening in Signagi and Gurjaani. In 2007, in the Signagi village of Vakiri, 102 families removed almost 35 hectares. The following year in these two municipalities (Signagi and Gurjaani) just over 317 hectares were cut down by nearly 700 families.

As for replacement of vineyards, most of this appears to be occurring in Kvareli, Dedoplis Tskaro, and Signagi with over 600 small farmers involved. While these numbers are still relatively small, they are an indication that farmers are moving in the right direction either to respond to market conditions or to increase productivity.

By municipalities and for three main categories of grapes (Rkatsiteli, Saperavi, hybrids), Table 3.13 presents vineyard area, production volume, yields per hectare, and average price per kilogram. On average, Saperavi has the lowest yields per hectare (4.9 tons) and hybrids the greatest (7.2 tons). However, during the 2007 production year, Saperavi grapes received the greatest price (GEL 0.45 [US\$ 0.27]) and hybrids the lowest (GEL 0.20 [US\$ 0.12]).

Table 3.11 Vineyards Removed in February-April 2008

<i>Place</i>	<i>Number of Families</i>	<i>Removed Area (ha)</i>
Gurjaani	272	104
Signagi	422	212
Total	694	317

Source: Samtrest

Table 3.12 State Program of Vineyard Substitution, November – December 2008

<i>Municipality</i>	<i>Village</i>	<i>Varietal</i>	<i>Number of Families</i>	<i>Substitution (ha)</i>
Dedoplis Tskaro	Samtatskaro	Saperavi	106	91
Dedoplis Tskaro	Pirosmani	Saperavi	4	10
Subtotal:			110	101
Kvareli	Gavazi	Rkatsiteli	186	82
Kvareli	Akhalsopeli	Rkatsiteli	16	54
Subtotal:			202	136
Signagi	Vakiri	Vakirula	216	55
Signagi	Anaga	Vakirula	50	10
Signagi	Sakobo	Vakirula	34	7
Signagi	Tsnori	Vakirula	4	1
Signagi	Jugaani	Vakirula	14	4
Signagi	Bodbiskhevi	Vakirula	2	1
Subtotal:			320	78
Akhmeta	Upper Khodasheni	Vakirula	1	1
Subtotal:			1	1
TOTAL			633	317

Source: Samtrest

Table 3.13: Grape Varietals and Average Yields, 2007

Kakheti Municipalities	Akhmeta	Gurjaani	Dedoplis Tskaro	Telavi	Lagodekhi	Sagarejo	Signagi	Kvareli	Total
Vineyards, ha	1 747	7 618	1 498	6 048	1 846	3 949	4 494	6 382	33 582
Rkatsiteli	1289	5250	936	3903	1643	2747	3486	3787	23 041
Saperavi	308	1787	491	1682	199	952	565	2316	8 300
Hybrids	150	581	71	463	4	250	443	279	2 241
Grape Harvest, tons	11 440	46 095	8 525	987	10 924	24 226	29 632	40 474	201 303
Rkatsiteli	8451	33510	5864	19135	10121	17888	23839	25666	144 474
Saperavi	2143	7625	2249	7512	787	4979	2130	13178	40 603
Hybrids	846	4960	412	3340	16	1359	3663	1630	16 226
Average Yield, tons/ha	6.5	6.1	5.7	5.0	5.9	6.1	6.6	6.3	6.0
Rkatsiteli	6.6	6.4	6.3	4.9	6.2	6.5	6.8	6.8	6.3
Saperavi	7.0	4.3	4.6	4.5	4.0	5.2	3.8	5.7	4.9
Hybrids	5.6	8.5	5.8	7.2	4.0	5.4	8.3	5.8	6.3
Grape Price, GEL/kg									
Rkatsiteli	0.35	0.35	0.35	0.30	0.35	0.35	0.27	0.35	0.33
Saperavi	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Hybrids	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20

Source: Ministry of Agriculture

It should be noted in Table 3.13 that the total hectareage for vineyards in Kakheti is presented as 33,582 versus that found elsewhere in this chapter: 31,437 (Table 3.10), 22,204 (Table 3.9), and 34,700 (Table 3.4). As referenced earlier, this variance represents the data challenge researchers, investors, government, and others find when evaluating not only the grape and wine industry but the entire food and agricultural sector in Georgia. Different sources of data often have very different estimates. The cadastral survey discussed above, if conducted properly, would resolve this problem with respect to the area actually in vineyards for each varietal.

4.3 Summary of Problems within Kakheti Municipalities: D/Tskaro

Within Kakheti, different municipalities face different opportunities and challenges. Thus, it is worthwhile to review some of these differences prior to formalizing an approach to industry investment or assistance. In the time available for researching this study, it was possible to develop such information on even a very basic level only for the Dedoplis Tskaro municipality. Ideally, more in depth assessments will be conducted on all eight municipalities within Kakheti as to the challenges they face from a production and marketing perspective.

The major problem within Dedoplis Tskaro is the absence of several dynamic operating commercial wineries of any size within the municipality. Thus, every year, local farmers must approach enterprises in other municipalities in order to find an outlet for grapes not used for home consumption. While there is some potential to sell locally and to other villages, this is often problematic, especially given reduced demand and increased domestic competition among grape growers since the imposition of the Russian embargo.

Within Dedoplis Tskaro, in the areas of Samtatskaro and Pirosmeni as well as other lower elevation locales, the climate is hot and rainfall low. (These are also the areas where considerable vineyards have been cut down.) Thus, it is necessary to water these vineyards more frequently which can add considerably to production expenses.

In Kakheti, grapes first ripen in these lower lying areas. When harvest occurs at the end of the vintage, grapes tend to be overripe which can reduce the quality of the wine produced from this raw material. Additionally, there is no zone for these locales. These two factors—potential for overripe grapes and the inability to produce an appellation or brand related to a zone—can significantly depress prices for grapes from these areas. As the main income of local

Table 3.14: Table Grape Harvest Periods in East Georgia

#	Month Day	July				August						September						October						
		15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	5	10	20	25	30		
1	Faoriti																							
2	Georgian Saadreo																							
3	Telimu shkotali 2																							
4	Khalili																							
5	Naranchizi																							
6	Malengri saadreo																							
7	Telimu shkotali 1																							
8	Kechke muturi 1																							
9	Portugizeri																							
10	Koroleva Vinogradnikov																							
11	Royal Vaenardi																							
12	Bestavashvili Tetra																							
13	Tsiteli budeshuri																							
14	Poloshkeu mmushkotali																							
15	Rkatsiteli																							
16	Senso																							
17	Poloshkeu mmushkotali																							
18	Mahmudi																							
19	Aleqsandrian Muskati																							
20	Ordubadi Taifi																							
21	Aguna																							
22	Iveria																							
23	Varzia																							
24	Sakartvelo																							
25	Gorula																							
26	Nimrangi																							
27	Tbilisuri																							
28	Naranchizi 5																							
29	Delisi																							
30	Muskaturi Rkatsiteli																							
31	Poloshkeu mmushkotali 3																							
32	Naranchizi 3																							
33	Vermentino																							
34	Tsitsakapra																							
35	Agadai																							
36	Kharistvala Kolkhuri																							

Source: Georgian Horticulture, Viticulture and Winemaking (Oenology) Institute, Mr. V. Gotsiridze

farmers is from grape production, this severely limits their earning potential. (Note: While these areas are within the “Kakheti zone,” this is not sufficient to create a demand from those who wish to purchase grapes to produce a quality product under an appellation in high demand.)

4.4 Observations Related to Table Grape Production

Although Georgia is known for and historically oriented to wine production, there is also a tremendous potential for table grape production. The country’s tradition of winemaking should not create an obstacle to the development of table grapes and grape juice production as a corollary industry. Horticulture, Viticulture, and Winemaking (Oenology) Institute representative, Mr. V. Gotsiridze, has worked for years on the issue of Georgia’s and Kakheti’s potential for table grape production.

It is generally felt that, within the perennial plants found in Georgia (e.g., fruit, citrus, tea), grapes can be the most profitable and that it can pay back its investment in the shortest period. In areas of the country with suitable rainfall, it can generate some production in the third year after planting and can reach breakeven and even greater levels by the fourth or fifth year. There is another factor which favors Georgian grape production for fresh consumption or juice. According to scientific analysis conducted by Mr. Gotsiridze, table grapes produced in Georgia during its range of harvest periods is preferable and exceeds in dietary and nutritional value that of table grapes from those countries contiguous to Georgia.

According to conventional horticultural criteria, table grape production is best suited for warmer locales which are flat and, thereby, suitable to mechanical cultivation. Such areas in Kakheti are in Sagarejo and Dedoplistskaro. Yet even beyond these areas, the vertical and horizontal production areas of the Kakhetian landscape, the associated climatic conditions, and the wide range of local and introduced grape species gives a broad range of opportunities to enlarge the volume and diversity of table grapes produced.

This is reflected in Table 3.14, which presents the table grape production harvest periods for eastern Georgia (primarily Kakheti). Georgia’s agro-ecological resources allow the production of table grapes in the full range of normal harvest periods for this crop in a temperate climate. Thus, table grape potential is not limited by a lack of species appropriate to the region.

4.5 Recommendations for Improving the Wine and Grape Sector in Kakheti

While a range of actions need to be undertaken at the national and international levels to protect and promote the Georgian wine and grape industries, within Kakheti, there are a number of initiatives or steps which can be undertaken after appropriate deliberation and design. A number of these will be touched on in this section.

4.5.1 Cadastral System

It is felt by many that the most important and first step that should be undertaken to help the Georgian wine industry is to complete a comprehensive cadastral survey and registration process. This would include mapping all vineyards by species (varietal) and location, the careful delineation of each appellation zone, the provision of an identification designation to each vineyard, and the recording of additional lands suitable for specific varieties in each zone. When this is completed, an effective and meaningful system for monitoring and controlling appellation production can be put into place and counterfeiting within Georgia further reduced if not eliminated entirely.

4.5.2 Replacement Plantings

Georgia faces two problems with respect to the varieties that are presently in place on existing farms (especially smaller family farms). The first of these is the area planted to certain varieties for which there is no longer sufficient demand to justify that level of production and little prospect that this will change in the foreseeable future. The second relates to the considerable hectareage planted in hybrids species which cannot legally be made into wine (but which sometimes make it into the system). Yet, in spite of these two problems, both of which reduce the salability of a farmer’s output of these grapes, farmers face the reality that if they try to replace these varieties with others they will (1) forego even the modest income they now generate, and (2) they will require significant capital to plant their vineyards to new varieties and to care for them the 3-5 years before breakeven production is reached. If the industry and government seriously want to change this existing situation, then creative approaches will have to be developed.

4.5.3 Range of Varietals (Species)

In Georgia it has been recorded that there are approximately 500 known local varieties or species of grapes. Of these, more than 300 have survived and currently exist. Most of

these varieties are not known even within Georgia or to most of its farmers much less internationally to viticulturalists or the wine markets. While it would not be wise to lose the richness of this diversity, it is also unrealistic to attempt to commercially produce grapes and wine from such a broad range of options. Therefore, it is recommended that an initiative be undertaken with the industry, professional viticulturalists, and those knowledgeable of the market demands for both wine and table grapes to evaluate this range of options with several objectives in mind. Specifically, this would be, as a minimum, to identify varieties suitable for (1) improved root stocks and other plant breeding research, (2) new niche market wines, some of which might have the potential to grow over time to become major products in Georgia or even abroad, and (3) expanding a profitable table grape industry. Initially, any of these would be undertaken on small hectares as part of pilot projects.

4.5.4 Table Grapes and Grape Juice

The potential for this has been outlined in some detail in the preceding section. In order for the potential to be realized (or at least in order to accelerate the process), there needs to be additional work done in order to develop scientific recommendations as to the optimal blend of the best production zones with the most suitable species grown with the most productive and profitable agronomic practices. Eventually, additional work will be required to delineate optimal market packaging and labeling.

4.5.5 Nursery Seedlings and Varietal Research

While a law has been passed which requires all seedlings to be certified as disease free, this does not necessarily mean this is happening in all situations. Additionally, there is the issue of seedlings being sold as one variety when, in fact, they are another. Furthermore, if there is any major push for replacement and new plantings as outlined in the preceding paragraphs, there will be a significant increase in the demand for a wide range of seedlings not typically or widely available. Finally, there have been advances in the development of more productive and disease resistant plant stock for major varieties whose wine is in demand in world markets. Such advances should also be undertaken for traditional Georgian varieties for the same reasons (better productivity, greater disease resistance). All this suggests that there may be an appropriate public-private opportunity to establish new or restructure existing nurseries to produce certified seedlings of the varieties and of the quality that will be needed. This will require funding but, perhaps more importantly, it will require (1) an effective

certification system as to both variety and quality and (2) research programs to develop or introduce better root and scion stock for those varieties of importance to Georgia.

4.5.6 Training in Wine/Varietal Identification

The proposed cadastral survey and registration of vineyards have many benefits for insuring the proper representation of harvested grapes when sold and the production of quality variety wines consistent with the true availability of raw material. However, other, more quickly achievable steps can be taken to increase the accuracy and fair representation of what is bought and sold. There are three ways to determine the variety of harvested grapes: appearance, sugar content (Brix), and taste. (Even if the exact variety cannot be determined, one can generally eliminate what it is not, e.g., it could be determined that it is not Saperavi). With proper training, buyers can develop the ability to determine what each grape is when it is brought to the winery or when being sold in local markets. Thus, it may be advantageous to farmers, field buyers, winery personnel, and technical advisors to undergo training in this area.

4.5.7 Farmer Cooperatives and Technical Assistance

Small farmers currently struggle to effectively and profitably market their grapes. The reasons for this are well documented and have been touched on elsewhere in this chapter. There are a number of potential solutions. One of these is the formation of farmers' cooperatives which might do one or all of the following:

- Purchase production inputs for members at lower prices than available to small farmers individually, e.g., pesticides, fuel, fertilizer, machinery and equipment, and other technologies
- Work with the government to survey and certify members' vineyards as to variety and zone
- Hire specialists to work with members to increase on farm productivity and quality from initial orchard development through care, harvest, and handling
- When success has been achieved in the preceding two areas, work on behalf of farmers to market an increasing portion of their production to commercial wineries which may now be more interested in their own internal product
- Work more effectively with Parliament, the Executive Branch, and various other governmental entities to improve laws, regulations, and other governmental actions and programs which can benefit the industry

- Work cooperatively to solve other problems which may periodically face membership, e.g., the outbreak of a new disease or pest, dumping by foreign exporters of product onto the Georgian market
- Conduct agronomic research for improved varieties and to work on the local species project referenced above
- Eventually possibly even undertake the production and marketing of wine although the option may exist to sell bulk wine to the larger commercial operations

While there are numerous benefits to cooperatives, there are also many challenges. Perhaps the major one may be the traditional resistance of Georgian farmers to join cooperatives for a number of reasons. These have included perceived inequities in income tax laws, the perception that cooperatives are moving back to the disliked characteristics of certain farm organizations prevalent during the Soviet era, and the traditional independent nature of farmers who can distrust placing finance, marketing, or similar decisions in the hands of others.

If cooperatives are to have some chance of success in Kakheti, a number of things would be of value in moving the concept forward. Obviously, there needs to be an effective education program. Incentives may have to be created. These could include the government's cost sharing in the provision of technical assistance and advisors for members of cooperatives. It could include attractive credit or needed machinery being made available only through cooperatives. It might be trying to develop a blend of these in partnership with commercial wineries where there may be the increased potential to sell product to these enterprises at competitive prices. In summary, because cooperatives are still a new concept for most farmers, it is absolutely essential to increase small farmer awareness and provide practical incentives if this concept is to have any chance of success.

5.0 Wine Tourism

In the spring and summer of 2005, the USAID AgVANTAGE project brought a short term technical expert to Georgia to assess the potential for wine tourism. The following are primarily extracts from the report, *Assessment of Wine Tourism in Georgia* with some paraphrasing and additional commentary. Those interested in understanding this opportunity more thoroughly should obtain a copy of this report.

Tourism, which essentially only began in independent Georgia in 1995, is a largely untapped sector of the

economy. Georgia's deep rooted wine culture, mild weather, historic monuments and churches, and accessibility to a large Euro wine tourism market could make an ideal location for tourism to thrive under the proper conditions and support. Although there were 300,000 visitors to Georgia in 2004, according to the Department of Tourism and Resorts, only 15-25,000 were actual "tourists" as defined by WTO. Georgia's share of the Euro market can be significantly expanded as could those tourists it attracts from the Americas, Southeast Asia, and the Middle East if proper planning, product development, public relations, and marketing are effectively undertaken.

Some degree of poverty alleviation through sustainable tourism development is possible as detailed in UNESCAP research. Remote and rural areas such as those found in Georgia often experience the most poverty and unemployment (or underemployment) yet at the same time can offer the best culture and nature-based tourism opportunities. Rural villages can be attractive to tourists for their heritage traditions and often unspoiled beauty which can, in turn, be supported by the development of tourism infrastructure and training programs.

The AgVANTAGE consultant felt that tourism in general has broad potential in Georgia but that wine tourism's role specifically would be smaller but still bright and a potentially important contributor to local economies through training and supply side development. Georgia offers a unique and authentic wine and food heritage which can be readily linked to tourism and expanded in support of agricultural products in addition to wine such as walnuts, hazelnuts, bread, cheese, fruit, mushrooms, poultry, pork, and buffalo products. The cultural landscape in and around Telavi is quite intact with its picturesque stone and brick structures, historic churches, ancient fortifications, and facilities of the vine including grape vineyards, wineries, and maranis. Those who work in subsistence agriculture could be trained in more lucrative tourism jobs. Tourism can act as a catalyst for not only sustainable rural economic development but also for regional development of infrastructure and the conservation of heritage and nature.

Successful tourism is about supply and demand, but sustainable tourism which optimally benefits the locales in which it is conducted is always about community involvement, local ownership and jobs, and preservation and management of the cultural and natural heritage. Tourism creates jobs for local communities directly through lodging, dining, shopping, and attractions (cultural, wineries, recreational) and indirectly through construction and services. It stimulates entrepreneurs and diversifies

economies, particularly in rural areas where employment and income may be sporadic or insufficient. It can also enhance rural quality of life through the construction of cultural, recreational, and support facilities if they are built to be shared. Lastly, tourism can generate foreign exchange if oriented in part to expatriates and foreign visitors. It should be noted, however, that luxury tourism can erode the value of this foreign exchange generation if the only way the “needs” of tourists can be met is through the use of products (construction, food, other) which cannot be or are not being produced in Georgia.

Along with such positive factors are potential negatives as well. Communities must manage environmental and social costs such as degradation of protected natural areas from overuse, traffic congestion, litter, vandalism and damage to historic sites, crime, and the potential for the erosion of social and cultural values. This is as true for wine tourism as any other form of tourism.

Wine tourism in Kakheti could have a relatively long season as tours would be ongoing throughout the year. Due to the school and typical holiday schedules plus the pleasantness of the weather, peak periods are often in the spring and summer. However, the fall harvest period also offers a prime opportunity for visitors. Special tours can be arranged which actually allow tourists to see the harvest and wine making process. Festivals and special events could be held throughout the year. If individual wineries advertise that they are open for visitors on specific days, then it is essential that trained and knowledgeable staff be on hand for tastings and to explain the history of the industry, the winery, and the winemaking process.

The obvious immediate target market for wine tourism is comprised of local leisure visitors and international expatriates (business people, consultants, donor agency staff, NGO staff, and diplomats). Even now these are looking for weekend “getaways” and family vacations. The next most obvious market, but one which will require additional development, includes regional tourists from the former Soviet republics (especially, Ukrainians, Armenians, and Azerbaijanians) and Turkey. Given the presently undeveloped state of the Georgian tourism industry (to include wine), these visitors hold more immediate promise as they may not require the same level of standards as tourists from the West, Japan, and the Middle East, who are more accustomed to high quality and/or well-managed facilities, food, and transportation even when visiting more remote locations. Before the recent conflict, Russians were an obvious target market, especially Russians who had traveled the world and were now looking for Soviet

nostalgia packages. Another more immediate target market is adventure travelers (from the West especially) who are open to experiences that are not as sophisticated or accommodating as many other foreign travelers will require.

The longer term prospects of attracting substantial numbers of tourists from Western Europe, Japan, the Americas, and the Middle East is more complicated and problematic. Marketing funds will be scarce and marketing initiatives in those countries quite expensive. Successful wine tourism in Kakheti will be difficult. Quality lodging and restaurants are limited. Wineries have not yet fully developed the tours and tastings to the level that foreign visitors to France, California, and other major wine producing regions of the world have come to expect. Transportation infrastructure needs improvement. Litter, waste management, and derelict structures are all still issues as the general aesthetics of an area is often quite important to foreign visitors. In order to optimize visitor days and expenditures, ideally wine tourism needs to be linked to other regional assets. While this is being done to some degree with religious sites, it needs to be expanded more inclusively to include national parks, Signagi, and Tusheti. Additionally, there is the opportunity for home stays and non-wine farm visits. Even Tsinandali, a critical cornerstone of wine tourism in Kakheti which has been leased to a private company, still falls far short of its potential. All of these, if done correctly, will make Kakheti more broadly appealing to independent travelers, domestic and foreign tour operators, and those they bring who will spread the word when they return home.

Yet wine is the soul of Georgia and especially Kakheti. Its unique 8,000 year history is a legacy upon which to build the future of tourism. To quote Vladimir Maiakovski, who was born near Kutaisi, using his wine metaphor for Kakheti’s wine tourism potential: “We are not yet wine. We are still just machari.” Through activities which are defined in the USAID AgVANTAGE report as well as others which have surfaced since then, wine tourism in the region has the potential to move from machari to a well aged product with excellent color, bouquet, and complexity.

ANNEX #1. WINE COMPANIES PRESENTLY REGISTERED IN KAKHETI

Akhmeta

There are few wine cellars in Akhmeta as its wine grapes are mainly sold in neighbouring districts. The wine companies are:

1. Badagoni Ltd., which has average capacity and its own vineyards.
2. Wine Cellar of the Alaverdi Monastery, which was rehabilitated by Badagoni Ltd.
3. Palavani Ltd. (Kistauri Factory), which is relatively old, but operational and located in the centre of the quality white grape zone.
4. Akhmeta Wine House, Joint Stock Company (Akhmeta Factory), which is large scale but outdated.

Gurjaani

Gurjaani is famous for its large-scale wine factories which mainly have outdated equipment. There is slow progress in terms of updating equipment with new investments planned. The wine companies are:

1. Gurjaani Wine Factory.
2. Mukuzani Wine Factory Ltd.
3. Zegaani Wine Factory Ltd.
4. Vachnadziani Wine Cellar Ltd.
5. Velistsikhe Ltd.
6. Kotekhi-Gurjaani Wine Factory Ltd.
7. Chandari Ltd., which owns large wine factories with old but operational production lines, often rented out, and produces only small quantities of wine.
8. Alaverdi Ltd., a new company with modern equipment.
9. Aguna Ltd., a new small cellar company with modern equipment.
10. Kardenakhi Wine Factory (Kardenakhi Lower Factory).
11. Alazani Ltd. (Kardenakhi Factory).
12. Kardenakhi Wine Cellar (Upper Cellar), with old equipment mainly rented out seasonally.

13. Nagdi Marani Ltd. (Tsarapi Marani) newly established small cellar.

14. Kachreti Ltd. (Kachreti wine factory), located in outer Kakheti, a large capacity factory; which is not operational.

Dedoplis Tskaro

Dedoplis Tskaro has only a few wineries at this time:

1. Mshvidoba + Ltd., outdated although operational equipment mainly producing white non-bottled wine.
2. Tushishvili Wine Sorts, outdated but well functioning factory.
3. Gonashvili Cellar, small Kakhetian wine cellar highly attractive for tourists.

Telavi

Most of the famous wine producers, from farmer cellars to large producers, are located in Telavi:

1. Georgian Wine and Spirits Company (GWS) Ltd., one of the first quality Georgian wine producers. Represents the branch of “Pernod Ricard Europe” Group in Georgia.
2. Telavi Wine Cellar Ltd., one of the first quality Georgian wine producers.
3. Teliani Valley, JSC, one of the best known brand names in and outside Georgia.
4. SHUMI Wine Company Ltd.
5. Old Wine Cellar of Tsinandali Ltd.
6. Kakhuri Ltd.
7. Corporation Georgian Wine (CGW) Ltd.
8. BESINI Ltd., a promising project with its own vineyards and a wine cellar under construction.
9. Vinoterra Ltd, a small-scale, high quality, typical Kakhetian wine cellar.
10. Tsinandali Wine Factory Ltd.

11. Teliani Wine Factory 1950, Ltd., with wine cellars of rich tradition and history. The best quality wines have traditionally been produced here although currently it does not produce its own wine.
12. Telavi Wine Ltd., a wine cellar of the former research institute which currently does not produce its own wine.
13. Akura Wine Factory, a medium-sized, quality wine cellar.
14. Napareuli 1890 Ltd.
15. Kakheti Wine House Ltd. (Saniore Factory), a well-equipped wine cellar in the Napareuli microzone working at low capacity.
16. Napareuli Old Wine Cellar Ltd., a small wine cellar producing good quality wine.

Lagodekhi

Lagodekhi has only a single winery of note:

1. Baisubani Wine Factory, large-scale, older factory.

Sagarejo

While not as significant as in other municipalities of Kakheti, Sagarejo does have a number of wineries:

1. Khashmi Factory, with modern and Soviet equipment mainly serving other companies.
2. Manavi Wine Cellar Ltd., a newly established, well-equipped and functional wine cellar.
3. Manavi, JSC, under construction on the old factory site.
4. Saamo Ltd.
5. Badiauri, JSC, large-scale wine factories with slightly outdated but operational equipment producing wines in small quantities and often renting out their production lines.
6. Keburia Factory newly established medium capacity wine cellar.
7. Kakhuri Traditional Winery Ltd., medium capacity factory.

Signagi

One of the smaller wine producing municipalities in Kakheti, there are only four wineries of note:

1. Anaga Ltd. (Anaga Factory).
2. Tibaani + Ltd., Tibaani Wine Factory, outdated factories which are not operational.
3. Khirsi Factory, JSC, outdated but operational.
4. Taro Invest, with modern equipment and its own diverse varietal vineyards.

Kvareli

After Telavi and Gurjaani, this is the most important wine producing municipality in Kakheti:

1. Corporation Kindzmarauli, JSC, a wine cellar with modern equipment and management with progressive views
2. Kindzmarauli Marani Ltd., a newly established, modern wine cellar in the middle of Kindzmarauli vineyards.
3. Sakartvelos Marani Ltd., which built a new factory on the site of an older one; owns a tunnel in the rock with an antique wine cellar but not currently producing wine.
4. Gallery of Georgian Wines, a large factory used by several companies.
5. Peter Mertes Sakartvelo Ltd., a medium-sized modern factory.
6. Shildi Wine Factory, a medium-sized factory with old equipment.
7. Shildi Wine Factory II, a medium-sized factory with old equipment.
8. Chikaani Wine Factory Ltd., currently refurbishing the equipment of the old factory.
9. I. P. Tengiz Lomidze (Akhalsopeli Wine Factory), mid-sized, old style Kakheti-type wine cellar.

CHAPTER 4. AGRICULTURAL PROCESSING: STATUS AND OUTLOOK FOR GEORGIA

1.0 Introduction

Historically Georgia has been an agricultural country. Until independence in the early 1990's, it was one of the main producers and exporters of canned and bottled products throughout the Soviet Union. Although relatively small in size and population, Georgia produced more than 10% of the non-grain related agricultural and food products for the whole Union. Its exports were 70% higher than its imports from other parts of the Soviet Union.

After the collapse of the Soviet Union, the existing food supply system was destroyed which severely hurt that portion of Georgia's food and agricultural sector oriented to primarily for export. Even those enterprises which sold some portion of their processed food products domestically were devastated as their facilities were scaled to far larger production than was demanded by the Georgian market. Additionally, the centrally planned national system in existence during Soviet times was of no value for a single country. There were no entities or individuals at independence who were competent or sufficiently well capitalized to recreate it as a private multi-national food company.

Thus, even if Georgia could have continued to produce and process agricultural products as it had been doing and there were still a demand in the other former Soviet republics, there was no means or capital for coordinating or securing spare parts, canning or packaging materials, distribution conveyances (trucks, aircraft, rail, ships), or access to the Soviet era wholesale and retail distribution networks. As a consequence, this, in combination with the poor product quality and characteristics of any surviving processing industries in Georgia at whatever scale, meant that virtually all processed food products consumed in Georgia were imported.

Over the last decade, this has begun to change. However, there is still a significant amount and value of processed food products being imported into the country. Thus, theoretically, this provides an opportunity of significance for Georgian entrepreneurs and foreign investors in the food and agricultural sector. Additionally, there may be export opportunities as well either separate from or as part of an import substitution orientation.

The balance of this chapter will (a) provide a brief introduction to the fruit and vegetable processing industry in Georgia, (b) highlight a number of internationally traded processed agricultural products which are also imported into Georgia, and (c) summarize the state of food processing in the Kakheti region.

2.0 Fruit and Vegetable Processing in Georgia

The processing of fruits and vegetables is one of the major growth areas of Georgia's industrial sector. Together with wine and fresh fruits and vegetables, it has the greatest potential for export. Yet in spite of this potential, fruit and vegetable processing is today only a shadow of its former self. During Soviet times, 780 million cans were produced annually. In 2003, this was only 1.2 million. Currently 55 of the 58 canning factories operating during the Soviet era are now closed. The remaining three are producing only a fraction of what they once did.

Since 2003 this situation has begun to change. Privatization of government enterprises was accelerated. The general investment environment was dramatically improved to include the reduction of corruption. Bureaucratic barriers were reduced or abolished. Infrastructure began to be rehabilitated.

All this resulted in the appearance of significantly expanded investment and the construction of new processing factories. An example is Rubikoni, a company producing frozen fruits and vegetables. The company was founded in 2000, but its first foreign investment was not attracted until 2004. At the current time (2007), Rubikoni is building a new plant and freezer storage areas together with its Dutch partners. Production capacity will be 5 tons per hour while the storage freezers will accommodate 5,000 tons of product.

Unfortunately since December 2005, the Russian Federation has banned Georgian fruits and vegetables as well as most processed products. Since 60% of Georgian products were usually taken to Russian markets, numerous companies have been hurt by the embargo, especially those exporting fruits and vegetables. A few companies like Rubikoni were still able to export product to Russia as the embargo did not affect agricultural product frozen below 20° Centigrade.

Yet, even in the face of the Russian embargo and the resulting loss of a major portion of Georgia's traditional export markets, given the steps that had been taken in the years immediately after the Rose Revolution, there are new fruit and vegetable ventures still being undertaken.

3.0 Import and Export of Selected Processed Food Products in Georgia and General Market and Production Tendencies in the Country

Seven products are analyzed below in terms of world market developments and demand in Georgia. The emphasis on products selected was for those that theoretically are being or could be produced in Georgia to include Kakheti. These products are:

- Tomato paste
- Ketchup and other condiments/dipping sauces
- Fruit conserves (with sugar syrup)
- Fruit jams and jellies
- Fruit juices and concentrates
- Sunflower oil
- Cucumber pickles

The information presented was found in various international publications (*Food News*, *Eurofruit*, *AgroInfo*, *FreshPlaza*) and the trade data base of the Customs of Georgia.

3.1 Tomato Paste

Consumption of tomato paste and other tomato products continues to increase in world markets. As was presented at a recent international tomato forum in Tunisia, worldwide consumption of these products increased by 3% in 2007, which was roughly the rate of annual increase for the past five years. When viewed in isolation, a 3% increase does not seem that large. However, for a food product and in absolute terms, it is quite significant. A 3% increase in world demand translates into 1 million tons of raw tomato product which is quite large. Consumption increased most significantly in the developing world, e.g., West Africa, as well as in the Near East, Russia, and China.

Turkey, the main supplier of tomato products to Georgia, is sharply increasing its prices due to increased consumption in the region and its competitive location best able to supply this new demand. Each year, Turkey produces 6-10 million tons of tomatoes of which 80% is sold for fresh consumption and 20% for processing. For 2007 it was assumed there

would be 300,000 tons of tomato paste produced in Turkey. Productivity of tomatoes is relatively high in Turkey—50-60 tons per hectare—due to generally modern production technologies in place. The price paid for processing tomatoes has been in the US\$200 per ton range.

Within Georgia, even in times of relatively low harvests, prices paid to farmers for processing tomatoes was only US\$170 per ton. Given the higher prices being paid in Turkey, at the lower price found in Georgia which is still apparently sufficiently attractive to its farmers, it should be economically attractive to further develop a larger scale domestic tomato processing industry which can compete effectively with foreign imports.

In 2006 nearly 4,900 tons of tomato paste were imported into Georgia with a value exceeding US\$3.5 million. Most imports occur in the October-December period. The reasons importers are willing to tie up capital in this manner is that the price of tomato paste is lowest at that time of year and Georgian demand begins to increase significantly beginning in November.

More than 50% of imports are from Turkey which is followed in importance by Azerbaijan, Ukraine, and Armenia. With three of Georgia's main suppliers being contiguous countries and two of them with relatively small populations like Georgia's, this would seem to bode well for the growth of the domestic tomato paste industry.

Within Georgia's retail food outlets, Turkish products are represented by five companies. There is no dominant brand among them that is especially popular among the Georgian consumer. In fact, the consuming public has a generally low opinion of Turkish products (to include tomato paste). Yet Turkish tomato paste is dominant in the market primarily because of its low price in comparison to other imported product. Interestingly, existing Georgian brands have a generally good reputation. This is a positive sign for the development of the Georgian industry if it can produce quality product at a competitive price (since price still seems to drive consumer decision-making).

The 2007 price of one kilogram of tomato paste was 0.2 Euros (approximately US\$0.26) in Turkey as well as on world markets. This price level, Georgia's previous experience with tomato paste production during Soviet times, and a suitable climate should provide some of the pre-conditions conducive to the growth of a domestic tomato processing industry. In fact, in 2007, a tomato canning factory opened in Kvemo Kartli capable of producing a range of tomato pastes as well as other canned

products. This factory can process 60 tons of raw material during a 24 hour period which enables production of 500 tons of processed products during a 60 day harvest season. If the harvest season can be extended or products with different harvest seasons found which are marketable, then this production capacity can be increased, possibly significantly.

Given the capacity of this one new tomato processing facility and current imports of tomato paste into Georgia (4,900 tons annually), there is obviously a theoretical potential to build a number of additional facilities. Given its climatic and soil conditions, Kakheti is a potential region in which one or more of these facilities could be located. The challenges which will be faced include:

- Absence of existing production of the appropriate tomato varieties
- Availability and adoption of necessary production technologies to include possible mechanization from seeding (or transplanting) through to harvest
- Assembling sufficient hectareage dedicated to tomatoes (either on a single producing entity or a grouping of cooperating farmers)

One possibility which may alleviate the latter challenge would be the possibility of building small and medium sized processing enterprises scaled to the production levels which are likely to be available. These could be in the 0.5-1.0 tons per hour of finished product scale. Such facilities cost in the Euro 1.0-1.5 million (US\$1.3-2.0 million) range.

3.2 Ketchup and Dipping Sauces

KETCHUP AND TOMATO DIPPING SAUCE

While ketchup was first produced in the United States, it has become a popular product internationally and is now consumed in virtually all countries of the world. The most famous brand is Heinz, an American company.

Consumption of this category of products in Georgia is quite high. According to 2004 data, there were more than 4,100 tons of ketchup and tomato products (excluding tomato paste) imported into Georgia, primarily from Russia, Ukraine, and Turkey. Turkey has its own modern ketchup factories while Ukraine and Russia mainly repackage imported product. This is especially true of Russia which imports 150,000 tons of bulk packaged tomato paste and similar product for repackaging and sale in both its domestic market and that of CIS countries. As

an example, 50% of ketchup imported into Georgia is coming from this Russian repackaged product.

The local retail network in Georgia has up to 25 separate ketchup brands. One of these is the famous Heinz brand, which is known for its high quality and high price (which limits its market share). Certain Russian and Ukraine brands are far more popular as their price is less than half that for Heinz. One of the most well-known Ukraine brands, Chumak, has managed to secure almost 20% of the Georgian market. All 25 brands have a range of products under that brand to include spicy, moderately, spicy, and sweet ketchups.

Presently Georgian produced products are restricted to a tomato dipping sauce and Tkemali. Tomato dipping sauces are distinguished from ketchup due to their organoleptic characteristics (e.g., aroma, color, consistency) and other qualities popular to the Georgian palate and eating customs. The product is made both commercially and at home in the traditional manner. The latter uses fresh tomatoes as the base ingredient and is not available through retail outlets. Commercial producers are small-to-medium sized operations who usually use tomato paste as the key raw material. As a consequence, the resulting product loses some of the quality and taste characteristics which make the traditional product so prized by Georgians.

Factors which can make one product more popular than another include taste as well as the color of the product. With respect to the latter, ketchup as well as tomato dipping sauce should be lighter red. Imported product tends to meet this requirement due to the proper packaging and storage of product during the manufacturing process (to include vacuum seals which reduce the possibility of oxygenation). Within Georgian facilities producing tomato dipping sauce, the product tends to have a darker red color, which results from using tomato paste as the base raw material and inadequate production technologies. This significantly decreases the appeal for the Georgian consumer with a concomitant drop in demand from that which might exist with a better quality product. As a consequence, many Georgian consumers opt to purchase imported ketchup with its better and more consistent quality and packaging.

TKEMALI

Tkemali is another traditional Georgian dipping sauce produced from wild sour plums. This product is very popular in local markets although it is produced primarily in small lots by families. Presently there is no standard technology or process for its production. Therefore, the quality of the

product and its taste is not standard but varies according to the place of preparation and the recipes used.

Tkemali produced by small and medium sized entrepreneurs is not of the best quality, and different lots of product from the same facility can have significant variations in taste and quality which, as with tomato dipping sauce, depresses consumer confidence and, thus, demand for commercial production. The local production and markets for commercially produced Tkemali is so undeveloped that there is a lack of product during winter and spring when there is no raw material available. On the other hand, Tkemali produced at home, although varying in characteristics between families and locales, is generally considered to be of very good quality and highly sought after by Georgians. There are typically up to five types of products produced (to include red, yellow, hot, sweet) depending on the recipe, raw material, and herbs used.

There seems to be no product analogous to Tkemali elsewhere in the world. It is a product uniquely Georgian with historical and cultural importance. As such, two commercial opportunities would seem to exist. First would be the perfecting of production technologies and product standards so that it could secure a more prominent place in Georgia itself, possibly even displacing some portion of other types of imported products which are also used for dipping. Secondly, it might find a niche market internationally and become a product for export once these production and quality issues are adequately addressed.

3.3 Fruit Conserves with Sugar Syrup

In the West and elsewhere in the developed world, there has been a move away from frozen and canned fruits preserved in sugar towards the consumption of fresh product whenever possible and affordable. Yet the fact remains that even with better packing, transportation, and storage, fresh fruit is still relatively perishable and/or subject to damage and bruising which makes it unappealing to many consumers (although the eating qualities of the fruit may not have deteriorated). Additionally, due to the higher costs associated with shipping and storage and product shrinkage from damage and spoilage, prices for fresh fruit are higher than that for canned or frozen product, sometimes significantly higher. As a consequence, within world markets, there is a constant balancing between that volume moved and consumed fresh and that which is canned or frozen.

Fruits found on the world markets which are typically canned in sugar syrup include tangerines (mandarins) most frequently out of Spain and China, pineapples from China

and India, and peaches from Greece and South Africa. At this time in Georgia, only tangerines have the potential for commercial canning with domestic production of the raw material at 70-100,000 tons annually. However, this volume is in the far west of Georgia, and Kakheti is not suited to the introduction of tangerine production.

As for domestic demand, canned fruits in syrup are not an especially popular product at this time. In 2006 only 12 tons was imported into Georgia with a value of US\$14,000. Thus, any entrant of a Georgian manufacturer into this sector would have to depend almost exclusively on foreign sales.

Kakheti presently produces in the range of 2,500-5,000 tons of peaches annually. While this is not especially large, it should be noted that the hectareage in peach orchards in Kakheti has been increasing by 10% annually in recent years (to include a new fruit species that is a mix of apple and peach). This new fruit has become increasingly popular and has even begun to replace some peach sales in local markets. Additionally, Kakhetian farmers have mastered the production technologies of both peaches and this new fruit species, which should over time result in expanded yields. Thus, the theoretical volume available for canning will be increasing over time. Nonetheless, given current and likely volumes for the foreseeable future, even though increasing, are able to be sold in the fresh market at premiums significantly greater than if sold to a canning operation.

In light of the preceding, it is unlikely that canned fruit in sugar syrup provides any material opportunity for a canning industry to develop in Kakheti at this time.

3.4 Fruit Jams and Jellies

A wide variety of fruit jams and jellies are sold in world markets. (Note: “Jam” is generally assumed to be made by boiling *fruit* and sugar while “jelly” is typically made from boiling *fruit juice* and sugar.) Berry jams tend to be the most popular although within some countries this need not be the case, e.g., grape jelly. While jams and jellies are widely consumed, official statistics often underestimate consumption significantly because of the large quantity of home production for use by family and friends.

In Georgia trade data shows that in 2006, there were approximately 230 tons of such products exported with a value of just over US\$204,000, all of which was local production versus re-exports. Nearly 80% of this went to the Russian Federation as these products were not subject to the embargoes put into effect by Russian in early 2006.

Unfortunately, as these items are rather small in volume and value, their continued shipments to Russia did little to abate the effect of the various product embargoes and their effect on the domestic Georgian economy.

During 2006, there were also 144 tons of fruit jams and jellies imported into Georgia with a value of US\$2484,000. Based on the import-export data, the value of imported product is essentially twice that for product exported. Nonetheless, this higher value product has still found a market in Georgia. There are a variety of reasons for this. The first and foremost is the broader variety of imported product. Typically local retail outlets have more than 20 types of fruit and berry jams and jellies which seem to sell reasonably well. As there are generally only 3-5 local brands available, without imports, the broader variety demanded by consumers would not be able to be met. It should also be noted that imported product tend to have good taste and organoleptic characteristics (taste, color, structure, aroma). Additionally, imports generally have high quality packaging and labeling which can be appealing to consumers when they see product on the shelf. Although there need be no correlation between good product quality and good packaging and labeling quality, consumers sometimes equate the two (at least for initial purchases) which can be beneficial to the marketing of imports. At this time, as with tomato paste, there is no single dominant brand in the domestic marketplace. Unlike the export of these products from Georgia, import is generally in fairly small amounts, i.e., in 250-1,000 kilogram orders and from Western Union and the former Soviet Union.

At this time, it is not felt there is a huge export potential for fruit and berry jams and jellies. However, while not massive, there is the potential for expanded production to meet domestic demand. There are three reasons for this. First, if Georgian product competing with similar imports has consistent and good quality, packaging, and labeling, it can begin to displace some of these imports. Second, as Georgia broadens its production of fruits and berries, it will eventually have new jams and jellies available to the domestic market which it does not now have. Third, and this is true for many of the products discussed in this chapter which have significant home production, as the economy evolves, more people live in cities, and fewer people have access to the raw material, more and more families will purchase jams and jellies where previously their families may have made them.

Within the Kakheti region, during Soviet times, there was broad experience in producing these types of products. Processing facilities in Lagodekhi and Gurjaani were actively

working in this field at that time. Of course, with the collapse of the Soviet production and marketing system, demand has now changed, and there is the need to introduce more current technologies and standards. Nonetheless, there does seem to be potential in the future, especially based on new and expanding berry cultures and the widespread availability and production experience with grapes. However, further study is needed to define the potential and challenges associated with developing this sector.

3.5 Fruit Juices and Concentrates

The consumption of fruit juices worldwide has been increasing at 3% annually. With 40 billion liters of such products currently being produced, this is an annual increase of 1.2 billion liters if current trends continue. Orange juice is the largest with 36% of the total volume followed by apple juice with 27%, and grape juice with 20%. Table 1 reflects the primary producers of fruit juices and concentrates with the United States, China, and Germany being the largest three respectively. On a per capita basis, the United States and Germany are the two top consumers of juices with 42-45 liters per person per year.

Table 1. Leading Juice Producing Countries

Country	Production (billion liters)	Market Share (%)
U.S.A.	8.0	20.0
China	5.0	12.5
Germany	3.5	9.0
Brazil	1.0	2.5
France	1.0	2.5
England	1.0	2.5
Spain	1.0	2.5

Consumption of natural juices has increased significantly in Georgia over the past five years. Instead of markedly increased purchasing of carbonated soft drinks, people have been moving more and more often to natural juices. Yet, in spite of this demand for such products, there is still weak representation of Georgian companies in the domestic market, and there is no high quality local brand preferred by consumers. Product bottled or canned are of generally low quality with non-competitive packaging. Interestingly, on the other hand, high quality apple and grape concentrates are being exported to European countries in bulk while the Georgian market is filled with imported juice products in retail packaging.

Georgia presently imports significant quantities of fruit juice. In 2006 this was 4,100 tons valued at US\$3.35 million. The Russian Federation and Ukraine are the primary suppliers with such well-known brands as “Nash Sad,” Moya Semla,” and “J-7” (with 15 brands) with 80% of retail stores being supplied with these products. Apple juice, orange juice, and mixed juices are presently in greatest demand on the domestic Georgian market. While Russian and Ukrainian juice products are competitively priced, their quality and juice content are not that high. Typically the juice content in Russian and Ukrainian imports is 15-50%.

The retail price of such products is approximately GEL 2 (US\$3.34) per liter, which is about 50% less than beverages that are 100% juice. This relatively high price for lower juice content product is difficult to explain in comparison to retail shops where quality and diversity are higher and prices lower. For example, one liter of 100% orange juice in British supermarkets is 0.55-0.85 pounds (US\$0.76-1.17). Part of the price discrepancy likely relates to volume movement in the market place. Unlike in Georgia, in Western Europe there is a high demand for such products, and prices are lower as a consequence due to economies associated with purchase, shipping, and packaging. Additionally, there are likely more importers and marketers which can place downward pressure on prices.

Georgian producers are weakly represented in the domestic juice market with only two companies in existence—Sante and Relko. Their products are found in most retail shops although packaging and quality does not meet that of most imports. Prices are usually about 10% lower than Ukrainian and Russian imports. Diversity of Georgian juices is also limited with only 5 types of product in the marketplace compared with 20 for imported juices. These two companies do not use Georgian raw material but rather repackage or reconstitute imported product.

Obviously Georgian companies cannot bottle nor can orange or tropical juices using domestic product. However, quality apple, grape, and possibly other juice concentrates are available locally from which quality product can be produced and should be considered for use by existing or new Georgian companies. Two of Georgia’s key products—apples and grapes—are exceptionally important for reconstituting and bottling juices in general. In fact, apple concentrate is used as a main component in the production of numerous juice products, e.g., pear, peach, cherry, and berry.

Juices for the consumer market are produced using one of two technologies. The first of these produces juice for

consumption directly from the fruit itself. The second reconstitutes concentrated juice into the finished consumer product. The former produces juices that are generally considered of the highest quality and which command the highest prices. However, this approach not only requires processing all raw material during the relatively short harvest periods for each fruit, it also requires much larger storage capacities and technologies which maintain quality of product even if not sold for some months after harvest. Because of these challenges, concentrate technologies were developed which allowed reconstitution of the juice as a consumable product by either the consumer or processors who produced a packaged consumer product. Just as with non-concentrated juice, all fruit is still processed during the harvest period (or shortly thereafter). However, as it is in concentrated form, its storage requirements are much less and simpler. Then, as the year progresses, concentrate product is either repackage in small consumer packs or reconstituted as a normal strength juice for packaging and sale.

The market for natural juices in Georgia is 5,000 tons per year. Based on the range of juice products currently desired by domestic consumers, it is estimated that perhaps 40% of this could be met through processing locally produced raw material. The balance (the other 60%) would still be dependent on imported product, e.g., orange and tropical juices which cannot be sourced from Georgian production. Within Georgia, since product is not being shipped great distances, it would seem desirable that some significant portion of domestic production would be not-from-concentrate products. (Note: Even in Georgia, reconstituted juice from local concentrates would still be less expensive than non-reconstituted product due to higher storage and other costs associated with the latter. Thus, there will likely always be a demand for both price point products.)

FRUIT JUICES FOR THE DOMESTIC MARKET

Those juices which have the most potential for developing high quality, not-from-concentrate domestic brands are apples, grapes, and certain berries. If successful, they have the potential for displacing much of the product coming in from Russia and Ukraine. Georgian processors would benefit by being able to sell a larger portion of their output in retail packaged, not-from-concentrate form vs. bulk concentrate product which does not command as high a per unit price.

In order for the Georgian industry to be able to successfully supplant imported product, it must effectively do two

things regardless of whether producing a reconstituted or non-reconstituted product. First, the quality of the retail product must equal or exceed that of imported brands. This can only be achieved by adopting suitable technologies and better controlling each stage of the process: growing, harvesting, processing, and storage. Second, there must be appropriate packaging and labeling which best meets consumer requirements as well as those of Georgia's wholesale and retail system. The former (packaging) is a key marketing tool and a necessary condition understanding and targeting a market. Given likely constant competitive pressure from importers, domestic producers of juice products must remain flexible and up-to-date as consumers will constantly be well-informed about changes in quality and the appeal of possibly new packaging and presentation of product. Presently, neither Georgian juice producers is sufficiently adept at all these things sufficient to undermine the market positions of Russian and Ukrainian brands. This, then, easily explains the rather low market share now held by Georgian companies.

Even if all the preceding prerequisites are accomplished, Georgian producers could still be at a scale disadvantage compared to other countries which may be able to produce and process raw material more cost effectively than in Georgia. While this does not preclude Georgian producers from successfully entering this field, it is not known whether transportation advantages will offset possible scale disadvantages. If they do not totally, then margins (and returns on investment) for Georgian product may be lower than that for imported. Still, the potential does seem to exist for import substitution of fruit juices.

In addition to the more traditional juices found in Georgia, e.g., apple, grape, there may also be the potential for some less traditional ones. For example, while the demand for tomato juice is presently relatively low in Georgia, these type products are in fairly high demand in many Western countries. Yet, consumer tastes can change. If and when this happens (or if a Georgian processing company can help develop this market with a side product to its main line), then tomato juice production may become a new opportunity for Georgian companies, especially one with related products.

As referenced elsewhere, during the Soviet period, the Kakheti region had major canning operations at Gurjaani and Lagodekhi using locally produced raw materials. Thus, there would seem to be the potential to reestablish such production operations although most likely on a smaller scale. Additionally, given likely product availability and domestic demand for any single item, for an operation to be

successful, ideally it would have universal production lines capable of producing a range of products, both in terms of agricultural commodities (e.g., different fruits rather than a single one) and the form of the product (juices, jams, jellies, concentrates).

Also, this diversification could be beneficial for product line extension for existing operations. For example, presently wine companies are well-versed in securing, processing, packaging, storing, and marketing product. For these companies to expand into other grape-based products (juices, concentrates, jellies) might be a logical move in some instances.

The cost for small production lines with capacities of 500-1,000 kilograms of raw material per hour is Euros 0.5-1.0 million (US\$0.65-1.30 million) when purchased in Western Europe. It is possible to import second hand (used) lines which are lower in price but which can still provide the modern technologies required. In fact, some second hand equipment can be better suited to current Georgian conditions because its technologies are not as complex and, thus, can more easily be maintained and operated.

FRUIT JUICE CONCENTRATE

During the past few years, fruit juice concentrate production has increased in Georgia. Apple concentrate especially has become a profitable business for medium and large factories in Georgia. The main export is to Europe where the Georgian product is reconstituted into juice.

Within Georgia, Shida Kartli is the primary apple producing region. Annual harvest in Shida Kartli is in the 250-400,000 tons range with the variability being dependent primarily on weather conditions. Of this, 50-60% is considered "non-standard" apples which can be used for processed product to include concentrates. Since the ratio of concentrate-to-apples is 1:8, Georgia has the potential to produce 15-30,000 tons of concentrate per year if all non-standard apples were used for this purpose.

Local apple concentrate is of a high quality with 1.7-2.0% acid content. This is considerably higher than that produced in China which has only 1.0% acids. As a result, Georgian concentrate commands a higher price than other producers such as China. Georgian concentrate tends to sell for Euro 1,650-1,900 (US\$2,160-2,490) per ton including transportation to Rotterdam.

Prior to 2006, approximately 30% of Georgia's apple harvest was exported to Russia. With the Russian embargo

put into effect in December 2005, this additional volume ended up in domestic markets, thereby, depressing prices for all apples. Consequently, the price for one ton of raw material in Georgia is presently Euro 30-45 (US\$39-49) per ton which is quite low in comparison for the cost of apples in Western Europe and Poland in particular (Euro 150-200 [US\$195-265] per ton). While this has hurt Georgian apple producers, it has made apple processing, especially for concentrates, significantly more attractive financially.

Georgia (and its Shida Kartli region specifically) has five factories producing concentrates. Among these, Georgian Product is especially known for its modern technologies and high productivity. Its factory is located in the Kareli district with a production capacity of 480 tons in 24 hours. The facility was opened in 2005 and has an annual production of 3,000. As there are significant supplies of raw material in the surrounding area, the factory essentially operates at full capacity for the entire harvest season.

The production of concentrates of all types has become an increasingly profitable business in recent years. The primary reason is that natural juices in the world markets are either replacing or at least growing faster than carbonated drinks. This increased demand has translated into higher concentrate prices not only for apples but for citrus and other fruits.

Georgian Product has studied Georgia's fruit production capacities as well as these trends in international markets. As a result, the company decided to build two additional concentrate plants. One of these is in Adjara to produce citrus concentrates and products like puree, jam, and juice. The second facility was built in the Kakhetian municipality of Gurjaani to produce grape concentrate and bottled juice. Just as with apples, the Russian embargo significantly impacted wine exports. (Over 70% of wine exports traditionally went into the Russian market.) As 200,000 tons of grapes are typically produced in Kakheti annually, the embargo essentially reduced the demand for grapes in the region by nearly 45,000 tons. These grapes are now becoming the raw materials for facilities like that of Georgian Product to produce concentrate and juice. As a consequence, the emergence of this new industry in Kakheti has helped reduce the negative effects of the Russian embargo on local farmers and the local and Georgian economy.

The Georgian Product factory can process 30 tons of grapes per hour and is equipped with modern equipment that can be adjusted to allow the processing of other fruits

and berries. With this possible processing diversification potential, the facility's processing season has the potential to be extended when the economics are justified. For example, berry harvest begins in May and ends in August just before the harvest period for grapes. Nonetheless, at this time, there is still not sufficient volume of farm production of processable fruits and berries to allow the factory to operate at full capacity during this extended period.

Unfortunately, due to the falling price for concentrated juice on the world markets, the Georgian Product factory in Kakheti has ceased functioning at least temporarily, and it has not retooled to be able to handle other products which might be available. Its ability to operate profitably as an enterprise may also have been affected by the government program during the 2008 harvest season of subsidizing grapes. This may have increased the average price of grapes to this factory by GEL 0.15 (US\$ 0.09) per kilogram. There are no indications presently as to if or when this facility might reopen.

3.6 Sunflower Oil

Sunflowers are one of the most important sources of food oil used for cooking and as an ingredient in food products. Each year there is about 30 million tons of sunflowers produced in the world according to Agra-Europe 2007. Main producing nations are Russia, Ukraine, and Argentina. Annual production of sunflower oil exceeds 8.8 million tons which is fourth in importance as a food oil after soybeans, palm, and rapeseed.

International trade in sunflower oil is approximately 3.4 million tons worth US\$1.583 billion. The leading exporter is Argentina with 30% of world exports followed by Ukraine with 27% and Holland with 10%. The major importers are Holland with 11% (which is primarily then re-exported), Algeria with 8%, and Germany with 6%.

In Georgia, sunflowers are produced in Kakheti. According to the Georgian Department of Statistics, in 2006, there were 22,000 hectares producing 8,300 tons. Based on this data, average yields in Kakheti are low and do not exceed 0.40-0.60 ton per hectare. This compares with other countries with yields in the 2.0-2.5 tons per hectare range.

According to 2006 customs data, there are more than 35,500 tons of oil imported into Georgia with a value in excess of US\$27 million. Ninety percent of this is sunflower oil typically in 1.5 liter or smaller containers for retail shops. Other imports are distributed between palm, rapeseed, and olive oils. The main source of imports is

Ukraine with its most popular brands being Oleina, Slavol, Dar, Mechta Khazaiki, Ya, and Avedov.

Unlike in those countries from which Georgia imports, there is currently only one local company in Kakheti which extracts and packages sunflower oil for the retail market. Additionally, there are four other factories in the region which are only oil pressing enterprises. In addition to these, there are a number of other small to medium sized entrepreneurs who press sunflowers for their oil. Farmers deliver their sunflowers to these operations, and oil is produced for a designated price. The farmers then sell the oil locally as well as at roadside and agricultural markets. Product for local sale is not refined and, thus, has limited durability or shelf life. Of imported product, 99% has a shelf life of 6-12 months with good organoleptic qualities and impressive packaging and labeling. Because of this and the generally higher prices for locally produced oil due to the higher costs associated with small scale production, through 2007, imported product dominates the market.

Since 2006 international prices for food oils have increased significantly. In 2006, oils imported into Georgia had an average cost of GEL 1.7-2.2 (US\$2.84-3.67) per liter. In 2007 this had increased to GEL 3.9-4.2 (US\$6.51-7.01) per liter, a roughly doubling of the price. The main reason for this seems to be the shifting of sunflowers and certain other agricultural commodities to the production of biodiesel fuels. (Note: Biodiesel is produced from products like sunflowers in two ways: (1) replacement of glycerin from the secondary food oils with alcohol, and (2) production of biodiesel from primary oils.) While energy prices have recently declined, experts generally assume the tendency will continue to grow to produce biodiesel from agricultural products historically used directly or indirectly to produce product for human consumption. Thus, while there will still be wide fluctuations in commodity prices for products such as sunflower oil, the new averages should be sufficiently high to make sunflower production more attractive and competitive for Georgian farmers and companies.

Using modern production technologies and given the areas available for expanded production, Kakheti has the potential to expand its sunflower production fivefold to 40-45,000 tons annually. From this could be generated 13,000 tons of sunflower oil which could potentially displace approximately 40% of imports. This could benefit farmers, processing/packaging firms as well as the country as a whole. At 2007 prices, this might save the nation approximately US\$20 million in foreign exchange as well as helping to stimulate and revitalize the Kakhetian economy given the negative effects of the Russian embargo on so many of its products.

Sunflowers can be produced on lands and in areas that are not ideally suited for fruits and vegetables due to the appropriate climate or the availability of irrigation. Additionally, the value of sunflower production can potentially exceed that for wheat, corn, corn, and soybeans. The comparative advantages between these crops and areas within Kakheti should be the focus of a study which provides farmers and other potential investors with sufficient knowledge to make investment or crop shifting decisions. Additionally, such a study will provide insights to government as to where it might focus its research, extension, and credit activities. One component of the study should be to delineate the product characteristics and qualities (to include packaging and labeling) which must be present if Georgian product is to be competitive with that which is imported.

3.7 Cucumber Pickles

China is by far the largest producer of cucumber pickles with approximately two-thirds of world production. Other producers of note are Turkey (5% of world production), Iran (3.6%), the United States (2.7%), and Japan (1.9%).

According to customs data, during 2006, there were 5,000 tons of pickle cucumbers imported into Georgia with a value of over US\$4 million. While Georgia's neighbors of Turkey and Iran are two of the larger producers of pickle cucumbers in the world, nearly 80% of Georgian imports are from Azerbaijan, India, and Bulgaria. There are approximately 20 brands found in retail shops. They tend to be differentiated according to packaging, quality, size, and price. Small pickles with good quality, aroma, and taste command the highest price. Overall, however, market research has shown that for the Georgian consumer, products in the middle of the price range are most popular. Georgian supermarkets and other retail outlets sell most of their pickle cucumbers as canned products.

The production of pickle cucumbers is not developed in Georgia. During the 2003-2006 period, a Georgian company, Grebi, used to repackage wholesale product from Iran into half liter cans. Presently, however, there is no commercially packaged Georgian product found in the domestic trade networks. Nonetheless, there are cucumbers that are pickled at home by farm families and those who buy small lots of cucumbers for pickling for family consumption. However, in Georgia, this home pickling is through adding salty water rather than through adding sugar, vinegar, and salt. Thus, the home product tends to have lower quality and taste (larger amounts of salt tend to produce more sour and unpleasant taste characteristics).

While Georgia does not commercially produce pickle cucumbers or significant amounts of cucumbers for pickling, the country does grow significant volumes of cucumbers for fresh consumption sold locally as well as transported to urban wholesale markets for sale. During the season, the price is quite low at US\$0.15-0.25 per kilo. Those cucumbers that are produced for pickling generally have yields of 8-10 tons per hectare, but prices are high (US\$ 0.45-0.60 per kilogram).

Nonetheless, given the large volume of cucumbers imported into Georgia and the ability to produce pickling cucumbers in the country, this would seem to present a promising opportunity for both Georgian farmers and investors in processing/packaging operations. The Kakheti region is the first supplier of cucumbers on onto domestic markets. This is due to the climate in the municipality of Lagodekhi which enables farmers both to produce cucumbers in greenhouses as well as under open air conditions. This base may well provide the starting point for an expanded industry. However, any expansion of production which will be able to compete with imports must effectively address factors like appropriate species for production, production technologies (to include plants per hectare), and methods of harvest which provide the quality cucumber required for processing. A viable business plan must include consideration of all these plus all financial considerations related to production, processing, and marketing.

4.0 Utilization of and Potential for Processing Plants in Kakheti

Table 2 summarizes the various non-wine food and beverage processing plants found in Kakheti in 2006. There are 12 essentially operating at full capacity; 19 at partial capacity; and 14 now closed. Of those which are operating, the most numerous are for wheat and spaghetti production (8), bread and baked products (5), sunflower processing (5), and dairy products (4). However, numbers of operations are not necessarily reflective of value of output. An example might be the Georgian Product concentrate factory whose value of output might exceed that of the output for an entire category.

At the current time (2006), there are no large scale canning factories in Kakheti although there are small processing facilities in the municipalities of Telavi and Lagodekhi. Due to irregular production, the output from these workshops has little or no brand awareness even among customers in the area much less in Georgia more broadly where their products are not available in the retail trade networks.

With respect to the possible future expansion or addition of processing facilities in Kakheti, there are several positive and negative factors. With respect to the negative, there is:

Table 2. Current Utilization of Processing Plants in Kakheti (2006)

Sector	Full	Partial	Closed
Bread and Baked Products		5	
Agricultural Production Complex			1
Sweets Production			1
Dairy Production	2	2	1
Meat Production	1	2	1
Wheat and Spaghetti Production	3	5	1
Juice Concentrates	1	2	
Production of Assorted Products			1
Sunflower Oil Production	2	3	3
Fruits and Vegetable Production	2		4
Miscellaneous	1	—	1
Total	12	19	14

Source: Department of Statistics

- (1) A lack of analytical marketing information upon which to initiate most new or expanded ventures are not readily available;
- (2) While there is the potential for expanded agricultural production for processing, the raw materials do not always exist yet in sufficient quantity and is fragmented;
- (3) There is a lack of investment ready projects and, thus, investment capital;
- (4) Local brands have not yet been established sufficient to compete with the currently dominate power of imports;
- (5) Georgia has no laws to prevent the dumping of subsidized other below-production-cost foreign product on the domestic market;
- (6) The food safety law has not yet been implemented which may mean that consumers will not have confidence in domestic products; and
- (7) There is the possibility of a saturation of foreign markets which might either limit Georgian exports or create more domestic competition from foreign suppliers who can no longer find profitable product placement at home or in their traditional export markets

On the other hand, there are some positive factors:

- (1) Infrastructure (roads, power) is constantly being improved;
- (2) The government continues to work on improving the amelioration system;
- (3) There are unused agricultural lands available for privatization which could be used for expanded production;
- (4) Bureaucratic obstacles and unnecessary regulations are increasingly being removed;
- (5) Because of the recent war and general national pride, all else being equal, the Georgian consumer expresses a loyalty to local brands of quality;
- (6) There are considerable opportunities for import substitution; and
- (7) Domestic demand for these products is expected to rise as per capita incomes increase and as the hotel, restaurant, supermarket, and tourism sectors continue to grow.

5.0 Conclusions and Recommendations

In order to realize some of the processing opportunities that have been identified elsewhere in this chapter and to address the challenges faced by any attempt to expand

Kakheti's food processing sector, key conclusions and recommendations will be touched on below.

5.1 Regional Development Agency

A small regional development office already exists in Kakheti. This office or a similar entity should undertake the following.

5.1.1 Market and Raw Material Assessments

Further, more detailed assessments should be undertaken of world and domestic markets for those products which have been identified, based on this initial review of available statistical information, as having potential for Kakheti. Additionally, further evaluation of the region's capacity for supplying raw material to new processing facilities should also be conducted. This raw material might currently exist in Kakheti but not processed, could be from production expansions of existing commodities grown in the region, or for new agricultural commodities not now present.

5.1.2 Feasibility Studies

For the most promising opportunities based on the preceding assessments, project feasibility studies should be prepared to provide to potential investors within the framework of the Regional Development Agency (RDA) and the 100 Enterprises Plan of the President. These projects would then be promoted by the RDA and Governor's Office locally, within Georgia more broadly, and internationally. This would be done through business forums, targeted face-to-face visits, and the use of appropriate publications (e.g., investors guides, investment project summary brochures). One group to whom these projects might be promoted the regions wine industry who have considerable experience working with the agricultural sector in Kakheti, in agro-industrial processing, and in marketing both domestically and internationally. Given the current situation with the Russian embargo, the wine industry may be open to diversification opportunities.

5.1.3 Consulting Assistance

As the RDA and Governor's Office have little experience in conducting the preceding, a consulting group should be created or hired to oversee this process. The work of the group would include identifying consumer and production trends, collecting market information, and generating a database of the costs and suppliers of modern processing technologies and equipment. This group would the preparing the feasibility studies to include financial studies,

organizational and management plans, staffing needs, and raw material procurement approaches. This group would also work with the Telavi Business Center and other local entities to help develop their capacities to undertake in the future such studies, related business plans, and the promotion of such projects at business forums and to individual investors. Within Georgia such individuals or consulting groups presently exist who could perform these functions, possibly augmented with foreign specialists.

5.1.4 Tourism Link

Since tourism is being promoted and developed in the Kakheti region and for Georgia as a whole, it is important to explore any synergies between the development of tourism and that of agro-industrial development. This might range from the sale of certain agriculturally based products to foreign visitors to the promotion of locally produced goods simultaneously with the promotion of tourism abroad and in Tbilisi. There is also the possible link of tourist visits to regional processing facilities and the farmer suppliers of raw materials as part of the agro-tourism initiative.

5.1.5 Scale of Enterprises

Although there may be exceptions, generally the development of new investment concepts should focus on smaller to medium sized processing operations. There are two key factors driving this: the large number of small farmers in the region who are highly diversified in what they produce and with each typically producing only a small quantity of any one agricultural commodity, and the limited amount of cultivatable land not now being farmed which might be available to support a large scale project. These two factors will make it easier to develop processing concepts that do not have to draw from thousands of farmers in order to have sufficient raw material.

5.1.6 Investors Guide and Market Information Access

The RDA and Governor's Office should prepare a guidebook for investors. This publication would include, as a minimum, information regarding agriculture in the region; the general investment environment with respect to registration requirements as well as other laws and regulations affecting investors; state of infrastructure to include roads, power, irrigation, air, and rail; and available government programs such as "Cheap Credit," the 100 Enterprises Plan, access to farm machinery, and the process for securing land under the government's continuing privatization initiative. A separate supporting document should be prepared which summarizes investment opportunities. (This should not be

part of the investors guide as the contents of this second publication will likely require more frequent updating as conditions change.) It would be appropriate to integrate the RDA, local Business Centers, and the Governor's Office into Market Information System portal of key agricultural markets within the country and, when available, the markets in other countries. Presently one such portal is overseen by the USAID AgVANTAGE project which monitors a number of Georgian local markets for raw and canned products according to price, supply-demand, quality, and other characteristics. (Note: An investors guide was prepared for Kakheti in 2006. While this document does provide useful information, it does not include all that needed by an investor to determine whether Kakheti might be a potentially attractive location to explore versus other options possibly available.)

5.2 Processing Sector

There are a number of things that the processing sector (or new entrants into this sector) should do in order to improve the probability of their success. These include the following.

5.2.1 Market Orientation

For a significant time after independence, the country in general and domestic companies specifically had an approach that markets were producer driven: a company produced the product it was able to produce at a specified time and the consumer was expected to purchase this product at a price which would allow the producing entity to survive financially. This was a mentality that carried over from the Soviet era and a lack of competition with Georgia's markets. It resulted in typically low quality products and an underdevelopment of the agricultural sector. Of course, that situation no longer exists with the open markets and broad range of imported products now present in Georgia. The consumer now drives what is to be produced at what quality and price. Competition, both locally and abroad, drives who will be successful in capturing various segments of this consumer-oriented market. That is why access to ongoing, detailed market information (not just trade information which is what has essentially been presented in this chapter) is so critical to the success of any agri-business operation that exists or will be undertaken in Kakheti.

5.2.2 Consulting Businesses

As referenced above, there is often a need for consulting assistance to help develop and implement potential investment concepts. There is only limited consulting

capability in Georgia for conducting such work in the agricultural and food processing sector. Yet the knowledge these types of firms can bring can significantly increase the probability of identifying viable projects and then the ultimate success of those projects. Local companies or the RDA/Governor's Office may not be able to justify have on their staffs full-time employees in the broad range of skill areas required to monitor markets, design facilities, assess and improve raw material production capabilities, or stay current on the most recent and applicable technologies. Thus, it would be beneficial for donors and government to help develop this capacity through grants and other means.

5.2.3 Brand Development

While some product can be sold in bulk or as generic items, to achieve optimal margins, product brands must be developed and promoted, especially when it comes to "canned" products. ("Canned" is assumed to include those retail products actually in cans as well as those in other appropriate consumer packs, e.g., glass and plastic containers.) At this time, there is still limited variety of domestically produced products. However, in spite of this lack of variety, for that which is in the marketplace, there is an awareness by the consuming public of the characteristics of these local products, e.g., quality, healthy, natural, price. A good example of this is the company, Nikora, which currently produces most its products using imported raw materials. Nonetheless, it is still perceived of as a "local company" by Georgian consumers and expectations for its products is high. A similar regional company is Gurjaani Ice Cream, the products of which are known to be made of natural materials and is very competitive against local as well as imported brands.

5.2.4 Technology Upgrades

Most existing processing facilities in Georgia utilize older equipment which may not be input efficient (e.g., energy, materials) or able to produce the quality and characteristics now required in the marketplace. Since this situation is not expected to change in the future, only get more demanding, existing companies in this field must consider the feasibility of equipment and other technology upgrades by replacing all or portions of their existing manufacturing lines. While the decision to make these upgrades should be totally those of the individual companies, government may wish to provide technical assistance to help these entities evaluate their current situation and then provide reasonably priced access to credit so they can make necessary changes when it is justified.

5.2.5 Quality Control and Certification

Quality control and product certification is continues to be a critical issue for the food processing industry, especially if products are to be exported. All European, United States, and other developed country importers (or their governments) try to check the standards under which product is produced and processed. The situation now found in CIS countries as well as the alleged basis for the Russian embargo (the substandard quality or counterfeiting of imported Georgian product and phyto-sanitary certificates) has also brought the issue of quality control and certification to the fore. With the loss of the Russian market which absorbed the vast majority of Georgian exports of food and agricultural products, exporters now face the difficult reality of trying to market their products in the even more demanding markets of the developed world. Unfortunately, most of the existing companies started their businesses from scratch with little knowledge or experience in those areas of quality control in which they must now be competent. This, again, is an area which government may want to consider providing assistance through the support of Georgian companies which can provide the technical assistance needed. Additionally, government and/or industry must develop a certification system for exporters as a minimum which meets international trade standards and eventually one for product which remains in the domestic market.

5.2.6 Small Scale Farming

As was touched on in an earlier chapter, after independence, the decision was made to distribute farmland in small quantities to all families then engaged in agriculture or who lived in rural areas and villages. This has resulted in hundreds of thousands of small, highly diversified, essentially subsistence farmers. This has made it difficult for processors to secure a reliable supply of raw materials of the needed quality. A number of commentators on agricultural production have stated that these small farmers are not market oriented. The opposite is actually the case. While their first priority, of course, is to produce that which is necessary to survive as a family, virtually all do sell into the marketplace, either directly or through consolidators of one sort or another. And when they do sell, they are keenly interested in securing the best prices for their products. Nonetheless, they generally do not have the knowledge of what it is they should produce or the quality characteristics which will be demanded of that product. Another problem is that processing companies are averse to the idea of having to deal with hundreds if not thousands of individual suppliers in order to secure the raw material

they require. Thus, new options must be developed. One is farmers unions or associations who could act on behalf of both the farmer and the processor to ease the problem of control and monitoring of the quality and timing of production. More effort should be exerted in helping both farmers and processors to develop appropriate entities which will address this challenge.

5.2.7 Market Interventions

In recent years, especially since the imposition of the Russian embargo, the Georgian government has increasingly intervened in the market for agricultural products and production inputs. While the government's intentions for doing so were good (i.e., helping farmers financially whose incomes were severely depressed by the loss of export markets), these actions have distorted markets and may be hindering necessary the development of the input industry and the restructurings of the food and agricultural sector so that it can effectively compete in today's domestic and world markets. This has occurred recently in mandarins and grapes and has occurred previously in wheat. It has also happened with the provision of production inputs (farm machinery, fuel, fertilizer, seed). In the future, if the government wishes to help a segment of the agricultural sector due to a sudden and severe situation which may be causing extreme hardships, then it should work closely with those knowledgeable in this field to develop approaches which will address the problems without unnecessarily creating others.

CHAPTER 5. AN OVERVIEW OF THE FOOD AND AGRICULTURAL DISTRIBUTION SECTOR

1.0 Introduction

During Soviet times there was a dualistic system for the distribution of food and agricultural products in Georgia. Even with its shortcomings, the first of these was a sophisticated, highly integrated, centrally directed system. This system linked the consumer not only to Georgia's production, packing, and processing from its own State farms, cooperatives, and related agroindustries but also to those of all republics of the Soviet Union. Due to Soviet policies at the time, there were few food or agricultural products allowed into this system from outside the Soviet Union. The second distribution system found in Georgia was the informal one whereby agricultural products allowed to be produced on individual plots and from farms and herdsmen in areas of the country whose agriculture had not been socialized were sold, given, or bartered to others.

With the collapse of the Soviet Union in the early 1990s, the first of these systems essentially collapsed as well. This was for a number of reasons which included (1) the unavailability of items within Georgia required to maintain processing equipment and cold storage facilities or to can or package product, (2) the absence of operating lines of credit necessary to buy these items from other former Republics or from abroad, (3) the uncompetitive prices of many items produced in the former Soviet Union (to include Georgia), and (4) the decline of the transportation network.

As a consequence, it was the informal system which became dominant, but one which was now augmented (albeit it in a small way initially) by those budding capitalists who managed to begin importing food and agricultural products and those few packing and processing facilities which survived even if at scaled down levels. However, even these latter entities (importers, packers/processors) were tending to distribute and sell their products in the more traditional ways, not those found throughout the West and other more developed countries. Additionally, these importers and surviving packers/processors came to rely less and less on refrigerated storage and transportation.

Essentially, by the mid-1990s, Georgia's food and agricultural distribution system was not that dissimilar to

what was found in the less developed countries of Africa, Asia, and Latin America. In some respects, Georgia even trailed these other countries because they had been integrated to some degree into the global economy through former colonial or historic trading partners. Additionally, there was often a quite sophisticated trading class operating within those countries which did not yet exist in Georgia, e.g., Indians in east Africa, Lebanese in West Africa.

Beginning in the late 1990s as the economy began to improve and accelerating even more since the Rose Revolution, this has begun to change. While the informal system is still widespread and continues to be invaluable to both farmers and consumers, more sophisticated means of importing, consolidating, distributing, and selling food and agricultural products has become more prevalent. The remainder of this chapter will address how the system currently looks and is evolving for wholesalers, retailers, and food security and quality.

2.0 Wholesale Marketing

Typically when one thinks of the wholesale marketing of food and agricultural products in Georgia, what generally comes to mind are the large, open air markets mainly found in major cities. However, the system is far more complex than this. It now also consists of a growing number of importers, packers, processors, and consolidators. Each of these secures product and moves it at wholesale prices, sometimes but not exclusively through these large open air markets.

Nonetheless, these large wholesale markets are still an important component of the current food and agricultural distribution system found in Georgia. They tend to sell both food and non-food items. Traders at these markets are small to medium sized and tend to specialize in a related grouping of products, for example, processed or fresh fruits and vegetables, processed or fresh meat or fish products, coffee and tea, alcoholic drinks, mineral water and beverages, or spices and specialty items. Unless they are a consolidator operating out of the truck in which they gather their goods, they have small warehouses and/or containers (typically 12-60 square meters) where product is stored before sale.

Except for smaller scale consolidators who may bring a truckload of product from a nearby country, e.g., apples out of Turkey, few of them import product directly. Rather they purchase from large importers who buy a selected range of products in bulk and move them into warehouses or cold storage facilities.

The buyers at these large open wholesale markets are both citizens and the owners of small shops and restaurants. All come to the large urban wholesale market typically to purchase a broad range of products at a single location as well as to save money over what must be paid at small local retail shops and street vendors. For individuals, these wholesales markets are the precursor of the supermarket with less convenience but better prices and sometimes fresher product. These markets are especially important for the owners of retail outlets and restaurants located in outlying villages and smaller towns to which large wholesalers and the newly developing food service companies do not yet service.

All purchasers at the large wholesale markets pay cash as traders do not provide credit. Price of product is a function of quantity purchased. Yet, while volume can make a difference in the price paid, prices at these markets still tend to be 10-15% less than at neighborhood retail shops even when one does not buy in bulk.

To some degree, these large wholesale markets do provide a direct marketing opportunity for farmers under certain condition. However, these conditions can often not be met to make it viable for the farmer. Often a farmer may not have the necessary transportation to move sufficient product to the market to make it a worthwhile trip. Secondly, he or she may not have the time to take away from other on-farm responsibilities to spend the one or more days at the market it takes to sell the product they do bring in. Third, interior spaces within such markets are typically locked in by traders who are there on a daily basis throughout the year. Even exterior spaces, at least the best of these, are also locked in pretty much in the same way.

Farmers could overcome most of these challenges if they were part of a cooperative or other similar organization with more reliable and steady supply as well as someone to oversee the process. However, this has not yet occurred to any significant degree in Georgia. Consequently, farmers still tend to sell to small consolidators with a single truck who then move the product to the market or, if they want to make the trip to the market themselves, they tend to sell at smaller, totally open and uncovered wholesale markets out of the backs of their trucks or negotiate a truckload sale to some trader at the larger wholesale market.

Interestingly, because of historic development patterns, these large open air wholesale centers are in the more central parts of cities where land prices can be high. Typically, more outlying areas of the city are where modern apartment buildings and offices are built. In time these residential and business structures are followed by retail outlets and restaurants which service the new residents and office workers. Because of this and other factors, it is anticipated that the importance of the large open air wholesale markets will decline and/or their product mix will change. This does not necessarily mean they will decline in absolute size. Rather, their share of the market will decline as other options develop and become available. Additionally, it is possible that certain functions, such as the sale of large lots of fresh produce may move to new, less expensive locations on the edge of the major cities. For non-agricultural products one of these large markets already exists on the outskirts of Tbilisi.

In addition to the urban open air wholesale markets, large (by Georgian standards) wholesalers (who are also generally importers) are becoming more important in the food and agricultural distribution system in Georgia. These companies tend to have their own warehouses and sometimes cold storage facilities. While they do supply some restaurants and smaller retail outlets directly, they tend to sell to the growing supermarket sector as well as to middlemen and the smaller wholesalers/traders who then have stalls or outlets at the open air urban markets.

Terms of payment and other trade conditions tend to be similar no matter who the large wholesaler's customer is, e.g., hotels, restaurants, supermarkets. The large wholesalers themselves tend to be able to purchase from their overseas suppliers with payment 20-35 days after delivery of product. Wholesale margins for these larger operations tend to be in the 10-20% range and are a function of volume. Networking between wholesaler and supplier and wholesaler and their customers is typically by telephone. Shipments from suppliers are typically from once per week to twice per month. Distributors or the purchaser of primary agricultural products are typically responsible for transporting products from storage facilities (cold or dry) to the wholesale markets.

Generally large wholesalers are headquartered in Tbilisi with most of their storage there. Thus, it is typical for most of the movement of goods to the regions to be sourced out of Tbilisi. Given its generally close proximity to Tbilisi, Kakheti is reasonably well positioned geographically to develop close relationships between these large wholesalers

and its agricultural sector and agro-industries as the need and opportunity arises.

Until the last two years there had been a marked increase in the number and size of the larger importers and wholesalers in Georgia. Prior to that large quantities of goods, including food products, were smuggled into Georgia through controlled and uncontrolled (i.e., Abkhazia, Tskhinvali) territories. Much of this was done by individuals with only a single truck who would then have particular farming areas from which they would source and specific wholesale markets, towns, or villages to which they would then sell. (These individuals, especially those from South Ossetia, were also critical in moving Georgian product around the country and abroad to markets in Russia and the Ukraine.) This began to change in 2003 with the advent of the Rose Revolution and a revamped customs and police force began to take more aggressive actions against the illegal entry of goods into Georgia.

As soon as smuggling was reasonably under control, this opened up an opportunity for larger players to enter the food and agriculture import and wholesale field. These larger, more sophisticated, and better financed companies dealt directly with sources abroad and began the movement of products through official channels at significantly increased volumes. (Note: Because of heavy smuggling through 2003 and only beginning to decline thereafter, earlier official statistical data likely underestimated both imports and national consumption of certain products.) These larger companies increasingly developed sophisticated storage and distribution systems which had not existed in Georgia for over a decade.

The large importers-wholesalers supplied smaller wholesaler-traders, new chains or hospitality conglomerates which were springing up with multiple restaurants and even hotels, the emerging more Western style supermarkets, and individual restaurants and retail shops. Some of these importers-wholesalers represent all the products of a single large international firm like Nestle or Unilever with exclusive rights to sell their products. Others import from a range of international firms or sources with complementary, non-competing products, e.g., frozen chicken and bananas.

Because of quantity handled and rate of turnover, these larger companies receive the best prices from foreign suppliers which can either enhance margins or be used to sell at reduced prices to secure greater market share. Margins are typically 25-35%. Payment schedules are usually within 20-45 days for credit worthy customers with smaller wholesalers-traders typically having to pay sooner than retail chains.

Interestingly, in the past two years, there has been a shift in the structure of large wholesalers with some fragmentation occurring. Some of the large wholesaler-importers have split their operations into smaller units (although still not small). This may have been either a dividing of the company between several of the original owners or actually a separation into specialized units but all still controlled by the original ownership.

The final major players in the wholesale field are Georgia's own agro-industries and fresh product consolidators. Dominant among these are mineral water companies, wineries, and other spirits manufacturers (vodka, beer). (Within Kakheti, of course, it is the wineries, especially those who export and/or market widely in Georgia, which are for all practical purposes, large-scale wholesalers/distributors as well as manufacturers.) However, increasingly there are others as well who produce processed fruits and vegetables (juices, jams, jellies, frozen and canned items), dairy products, and meat products. Other entities grade, pack, and/or store fresh items like mandarins, apples, onions, potatoes, and other fruits and vegetables. Except for the beverage companies, these others are still relatively small and do not yet have significant market presence although it is growing. Regardless of size, however, all these move product at wholesale prices to the same range of buyers as the major importer-wholesalers. Over time, it is expected that these companies and others like them will become increasingly important as Georgia's food and agriculture sector develops and becomes larger, more integrated, and sophisticated.

3.0 Retail Marketing

Just as with wholesale marketing, Georgia's retail system is also going through major transitions which are expected to continue for some years if not decades to come. After the collapse of the Soviet Union and Georgia's economy, virtually all food and agricultural sales to individuals for home use were either direct sales by farmers or through street vendors, small and large open air markets, and small retail outlets. These latter ranged from shops which specialized in one or a few fresh items like bakery products; meat, dairy, and poultry; and/or produce. In addition, there were small corner or village shops which sold a range of non-food items, canned goods and beverages, and possibly a few fresh items but on a more limited basis than the specialty shops. In a sense, these small retail shops were a precursor of the supermarkets to come. In the countryside along highways, farmers and villagers would set up points of sale out of wagons, trucks, or small roughly constructed stands.

This system is still very much in evidence throughout Georgia today. However, its importance is slowly declining, especially in large cities, as the modern supermarket system becomes more prevalent. Within the last several years, there has been a consolidation in grocery retail with an ever increasing number of supermarkets and the emergence of supermarket chains having multiple stores. As their volume and market power becomes stronger, these large retailers create their own distribution points where all goods are stocked. Increasingly they are even able to dictate terms to some importers and domestic processors/packers (see below) and are often able to require them to pay for the promotion of products on television, radio, and even inside their stores.

These newer, larger stores tended to have a wider ranging selection, better prices, and more consistent quality product throughout the year. Nonetheless, small stores and shops will continue to survive as more convenient neighborhood points of purchase which do not require a car or public transportation to access. While it has not yet begun to happen (at least to any significant degree), there will eventually be city-wide, then country-wide chains of these smaller retail establishments. Additionally, there will always be direct farmer sales for people who visit the countryside or their family villages on weekends and holidays.

One of the pioneers and leaders in this new trend towards supermarkets is Populi. Its organization, approach, and development are illustrative of the direction most successful supermarket chains will move through as they expand. Populi has 27 stores throughout Tbilisi as well as several in the regions. It has a centralized supply system with all stores sourcing from this single warehouse. Most products sold are imported. Nonetheless, the company does make a concerted effort to develop relationships with domestic food processing and packaging companies even to the point of offering simplified procurement plans which do not require adherence to international standards or the introduction of standards at the production level. As appropriate, new products are tested for organic indicators as well as being subjected to laboratory testing. Product sold must meet acceptable packaging and labeling requirements and increasingly bar coding is mandatory. A supplier to Populi must be a VAT payer, which tends to eliminate the possibility of a relationship with many small and medium sized producers and traders. On the other hand, the company does not require certain certifications from domestic producers beyond a production certificate. This can be beneficial to small traders and agri-businesses. Finally, suppliers must absorb the transportation expense to deliver product to Populi's central warehouse.

When Populi enters into a relationship with a new supplier, there is generally a three month probation period. Sales and margins during this period will be monitored and ultimately define whether there is further collaboration between the supplier and Populi and under what terms. Populi pays its suppliers 30-45 days after receipt of an invoice. This excludes an initial 300-450 cans or units which must be supplied to Populi in order to receive shelf space initially. This quantity becomes a "frozen balance" between Populi and the supplier which is never paid for until a final settlement should the relationship be terminated. These two factors—the volume necessary to achieve initial shelf placement for which no payment is received at that time, and 30-45 day payment terms—means that suppliers must have adequate working capital to accommodate a major customer like this. Many smaller producers and traders do not have the financial wherewithal to do this if any significant portion of their sales fall under these terms and bank credit cannot be secured.

4.0 Food Safety

The modern world is increasingly moving towards a globalization of most economic sectors to include that for food and agricultural products. Reduced trade barriers, the general ease of arranging international transactions, and increased incomes have resulted in a growth in demand in countries such as Georgia for a wider variety of healthy, tasteful, interesting food products. Unfortunately, with the greater movement of goods, especially agricultural commodities and food products, there is an increased risk of spreading crop and livestock diseases and of food borne illnesses occurring among consumers. In light of this, food security issues and related laws, regulations, inspections, and enforcement are becoming increasingly important to facilitate and maintain such trade and reduce the likelihood of health (animal, plant, human) problems spreading to importing countries.

Even within a country, such issues are becoming more important for the domestic food production and marketing sector. This is the case for a variety of reasons. As there are now greater distances between farmers and consumers and greater time lags between harvest/slaughter and consumption, there is a greater possibility of food contamination at some point within this system if even one handler does not perform its role responsibly. Additionally, sometimes the more concentrated production, especially with livestock, the greater the risk of disease introduction. The same is true with the increased use of chemicals for nutrition or pest control, chemicals which can be harmful to consumers if acceptable tolerances are exceeded.

Furthermore, although modern processing facilities can be more sanitary than many traditional technologies, if there is a breakdown in sanitation at the modern facility, it can affect hundreds if not thousands of consumers which was not the case with an on-farm breakdown which might only have affected the family or a few others in the village. Finally, as more and more products move into Georgia from abroad, diseases which can devastate an agricultural sector can be introduced into the country, e.g., African swine fever.

In countries such as Georgia, food security laws, regulations, inspections, and/or enforcement typically lag the West to a great degree. Until more recently this was not as serious a problem as it is now becoming. This change in circumstance is due primarily to (1) the desire of Georgia to export its food and agriculture products into world markets which requires higher quality and safety standards than common in the country, and (2) the changed production, marketing, and import factors outlined in the preceding paragraph. Thus, today Georgia faces a dilemma. Adoption and enforcement of food security laws and regulations necessarily imposes certain costs on the food and agricultural sector as well as creating opportunities for corruption in the inspection and enforcement process. On the other hand, if Georgia does not appropriately move forward in this area, it will lose certain export and economic growth opportunities and it exposes its own agricultural sector and consumers to the possible introduction of devastating diseases or illnesses. Since 2004 Georgia has been struggling to address this dilemma in ways that are best for the country. It has been a difficult, sometimes rancorous, and always delicate balancing act with ultimate success not yet assured.

In 2005 the Parliament of Georgia adopted a Law on Food Security and Quality. Based on this law, once appropriate regulations were put in place, every food and beverage processor and packager would need to adopt internal systems of threat assessment and detection. The law is based on risk analyses and prevention at each stage of the food system, from “farm to fork.” This integrated approach with associated mechanisms sets responsibilities for businesses as well as regulators. The law defines a unified national policy with the Ministry of Agriculture as the entity responsible for implementation through its Department of Food Security, Veterinary and Plant Protection.

After a temporary delay as to the schedule for implementation, the amended law now includes a new timeline that should enable both parties (the State and the private sector) the time necessary to meet the law’s ambitious (and needed) requirements. This timeline is as

follows for key industry sectors:

High Risk Food Processors*	January 1, 2010
Other Food Processors	January 1, 2011
Processors of Animal Food	January 1, 2012

* “High Risk Food Processors” are those handling meat, fish, poultry, and dairy.

Yet in spite of this definitive schedule for implementation, there are those who are speculating that the law will continue to be delayed indefinitely due to the perceived costs and complications it poses with respect to both the government’s ability to effectively oversee and enforce and for businesses in the sector to comply. This impasse could continue until one of three things occurs:

- A domestic food safety crisis which results in large numbers of Georgians becoming ill or even dying such as has sometimes occurred with salmonella outbreaks in the West
- An industry driven initiative resulting from a situation where the absence of an enforced law truly begins hurting Georgia’s ability to export, e.g., overseas markets such as in the EU and Ukraine refuse to accept any food products from Georgia
- A change in the philosophy of the government which generally favors as little regulation as possible

Whenever this law is finally implemented, it will require significant advanced planning by government to include industry education, training of those who will enforce the law, the existence of the necessary testing facilities, and the development of a broad range of regulations, procedures, and forms.

In addition to those standards and inspections required under the Law on Food Security and Quality, there can be other quality and traceability standards and procedures which, if adopted, are beneficial to firms marketing food and agricultural products both in Georgia and abroad. Essentially companies in Georgia who have (or hope to have) a market orientation towards Western Europe and other developed countries will independently of any government requirements introduce HACCP and ISO standards into their operations.

Even though Georgia’s existing legislation exempts primary agricultural production, importers in the developed world still require their suppliers to be able to control the whole production process from the farm through the processor/

packer and shipping in order to prevent food borne risks. Thus, Georgia's food processors and packers must be able to certify conditions and procedures throughout the system. Primary production certification, i.e., farm production, can be ensured through EUREGAP standards, which are directed towards definition of risks and timely prevention at the farm level.

The introduction of such standards (HACCP, ISO, EUREGAP) can be a complex and time consuming process requiring full involvement and commitment of company management and the allocation of sufficient financial resources. The benefit is that all such certified companies tend to develop positive reputations among buyers and their products are increasingly demanded by consumers who are aware of the controls which are in place to safeguard the safety of their food.

The Kakheti region, just like the rest of Georgia, has only recently started this kind of certification. In recent years many businesses have been damaged due to the lack of modern standards and quality control mechanisms and an effective State system for monitoring which is above reproach. The Russian embargo of many Georgian food, beverage, and agricultural products, while perhaps specious in nature, used the absence or unreliability of adequate controls as the basis for the imposition of the embargo on wine, mineral water, and fruits and vegetables. In Kakheti this especially hurt the wine industry but also fruit and vegetable producers.

Another example is the Gurjaani ice cream factory which produced a very popular product. In 2005 it was accused of selling unsafe product. Because of the absence of adequate controls and procedures, it is still unknown how its products became infected with an intestinal virus—at the farm level, at the factory itself, or after it left the factory. The company tried to overcome this public relations disaster. However, in the absence of appropriate quality control and a traceability system, its arguments were considered weak and insufficient to restore consumer confidence. As a result, sales have suffered considerably.

This one situation with the ice cream factory highlights the benefits of having appropriate standards and control systems in place and the need to constantly inform consumers about the steps that are being taken to protect their safety and improve quality. Doing so reduces the likelihood of problems arising in the first place, minimizes the potential for consumer misunderstandings, and improves a company's image in the marketplace, especially when many companies in Georgia may not yet be doing

these things. (Note: When this becomes standard for all Georgian companies, a marketing edge will no longer exist because consumers will by then expect and assume everyone is doing as they should in this respect.)

The above, while it references quality control, is essentially addressing only factors related to food safety, not non-safety issues related to quality. In fact the Law on Food Security and Quality does not substantively address these other issues. Yet these other quality (and packaging) considerations can be equally important if Georgian processors, packagers, and packers are to compete successfully in world markets. Over time, these factors will also become increasingly important in Georgia itself.

These non-safety considerations include the following:

- Physical/exterior appearance
- Unit size
- Bruising and deterioration upon arrival at markets
- Product taste/other characteristics
- Packaging materials and presentation
- Bulk vs. store vs. consumer packs
- Labeling and coding

If Georgian farmers, consolidators, processors, and distributors do not adequately understand and implement quality control and standards related to all of these non-safety factors, then their products will either not find a market, experience a declining market, and/or be able to sell only at sharply discounted prices.

CHAPTER 6. GOVERNMENT SUPPORT AND OTHER DEVELOPMENT CONSIDERATIONS

1.0 Introduction

The preceding four chapters have focused on describing specific components of the food and agricultural sector in Georgia and Kakheti, most especially primary agricultural production, the grape and wine industry, and the food processing and distribution subsectors. Various development opportunities were identified and recommendations made as appropriate in each of these areas. However, there remains a range of opportunities and challenges which do not fit logically in any of the preceding chapters but which should be elements of any comprehensive and successful attempt to develop and diversify Kakheti's food and agricultural sector. These include:

- National food and agricultural strategy
- Governmental interventions (price supports, farm machinery, seed, breeding stock, other production inputs, disease control)
- Product quality and certification (to include production inputs)
- Credit
- Agricultural research, education, and extension
- Business Consulting Network
- Investment promotion
- Communications
- Public-private partnerships

Each will be touched on below.

2.0 National and Regional Food and Agricultural Strategies

Despite the fact that there is not a comprehensive national strategy for the food and agricultural sector adopted by Parliament and the executive branch which guides government policy, programs, and actions in Georgia, individual Ministers of Agriculture have elaborated their respective strategic priorities. Additionally, the Ministry of Agriculture elaborates annually its four year Medium Term Action Plan which is incorporated into the Basic Data and Directions Paper, the document summarizing the Government's medium-term priorities, action plans and programs, and fiscal spending ceilings for each ministry. While these formats are useful, they do not address fully

the broad range of issues facing the Georgian food and agricultural sector.

Kakheti has just developed a regional development strategy, a major component of which relates to the food and agriculture sector. Yet this planning exercise and any follow-on initiatives might not be as effective as they otherwise might be unless consistent with policies and other actions the government chooses to pursue at the national level. Ideally, regional and national strategies would be integrated. At this time, other regions in addition to Kakheti are preparing to embark on the preparation of regional development strategies. Thus, they will face the same need as Kakheti to have a more localized strategy complementary to that at the national level. The following paragraph shows several examples as to why such regional-national integration and complementarity is important.

Presently, Kakheti has begun to diversify into certain agricultural commodities and food processing ventures. Its strategy suggests an even greater movement in this direction in the future. Yet, if the national government were to allow below-cost dumping of these products into the domestic market from other countries, these fledgling enterprises could easily be harmed. Another example is food safety. If investors move to build new facilities in Kakheti to produce exportable food items whose success is dependent in part on the existence of a consistent national food safety system as required by those export markets and government delays the implementation of the food safety law, then these ventures, too, could fail. A third example might relate to the wine industry. If the national government is unable to undertake many of those recommendations proposed in the Kakheti Regional Development Strategy, then the wine industry might choose to move in very different directions than it would otherwise. Each of these examples highlights the interdependence of what is undertaken at the local level with that which is undertaken at the national level. In light of the preceding, it would be beneficial if the national government undertook an initiative to draft a comprehensive national food and agricultural strategy which becomes the government's strategy. Approval would be by both the executive and legislative branches so that all are working in concert on its implementation and enforcement. The strategy would remain constant unless there were new conditions which required the revision of one or more components of that strategy. Simultaneously

with or immediately following this planning initiative at the national level, regional plans would also be developed (or updated if already in place). There are a number of donors who would be supportive of providing funding and technical assistance for this process

3.0 Government Interventions

Over the past five years, there have been a number of ad hoc interventions by the national government in the food and agricultural sector. Often the amount of money spent on such programs was equivalent to a significant portion of, if not actually exceeding, the entire annual budget of the Ministry of Agriculture. In every instance these interventions were well intentioned and meant to address a true need within the agricultural sector. Nonetheless, they sometimes did not fully achieve the intended results.

The timing and nature of many interventions are made for a range of reasons, all of which are not necessarily developmental. This is to be expected not only in Georgia but in most countries of the world. There need be no inconsistency in undertaking interventions which have multiple objectives, e.g., social, economic, humanitarian, political. However, when there are multiple objectives, then it is even more important that there be proper advance planning and coordination.

Ideally, any interventions—social, emergency relief, economic, political—will be consistent with an overall government strategy and related policies for the food and agriculture sector. Without such a strategy and policies, when the government looks for desirable interventions for whatever reasons, there is nothing it can reference which identifies the highest priorities with optimal impact or nothing against which it can measure or evaluate those interventions it might be considering. Thus, the first step in making any program of interventions (be they ad hoc or otherwise) more effective is the existence of a comprehensive national strategy document.

Ad hoc interventions in the food and agricultural sector happen on a fairly regular basis in Georgia, typically at least once each year. Therefore, once a national strategy is in place, the next step would be for those in government to review this strategy to identify a range of options which meet social, humanitarian, political, and developmental objectives. For the more desirable of these options (by whatever criteria the government wishes to use), evaluation and planning can begin sufficiently far in advance of the intervention so that, when the money is available or the situation warrants, they can be more effectively and

efficiently implemented and with a greater probability of meeting both short and longer term governmental objectives.

Obviously some government interventions are made to address crisis situations. When this occurs, there is generally often not the desired time to do all the evaluation and planning one might wish to undertake. However, even in such situations, if a strategy exists and there is prior evaluation and planning experience in other types of interventions, there is a greater likelihood it will be possible to undertake a crisis intervention that will have a higher probability of success.

Yet even with the best planning and management and even if consistent with a national strategy, it should be understood that any government interventions such as touched on below, have the potential to distort the marketplace. While farmers may benefit in the short run, these interventions may harm their competitiveness longer term, foster a welfare mentality, prevent the development of viable input suppliers, and waste limited financial and human resources. Thus, these possibilities should be taken into account when selecting and designing such interventions.

Kakheti's farmers have been both beneficiaries of and affected by past ad hoc interventions undertaken by the national government. These have included:

- Provision of fertilizer to every farmer
- Provision of diesel to every farmer
- Low interest/no interest subsidized farm machinery programs
- Price supports for grapes and mandarins
- Breeding stock programs

Several of these will be touched on in a bit more detail.

3.1 Farm Machinery Programs

In any discussion with farmers, the need for new or specialized farm machinery surfaces as one of the major problems facing farmers throughout the country. This is definitely the case in Kakheti. As a consequence, the government, either alone or in partnership with a donor, has undertaken a number of programs to provide farm machinery to farmers. While some of these have met intervention objectives, others may not have been as successful as originally anticipated. There are a number of reasons for this which are generally well known and understood.

In spite of any problems associated with past, a program to assist Kakheti (and other regions') farmers to purchase appropriate farm machinery and implements is highly desirable. Fortunately, all the challenges of past programs are not insurmountable. It simply takes a reasonable degree of creativity and planning to design an initiative that will work from both the government's and the farmers' perspectives. To do this properly, it is highly desirable to include during both program planning and execution the involvement of the targeted farmers, banks, and input importers/suppliers.

3.2 Price Supports

Since the Russian embargo in the spring of 2006, the Georgian government has taken numerous measures to try to lessen its impact on Georgian farmers. Two such programs were price supports for mandarins and grapes. While some short term financial benefits to farmers who produce these commodities have been achieved, both initiatives may also have created new challenges with respect to market driven competitive pricing and the production of quality products desired by the market. Even if Russia were to lift the embargo, it is still desirable for both the mandarin and wine industry to reduce their dependence on the Russian market. The price support systems employed to date may have inadvertently made it more difficult to achieve this goal.

As stated above, the price support systems did put more money into the hands of farmers during these difficult economic times. This was extremely important given the severity of the impact of the Russian embargo. Additionally, however, the price support programs may have also caused some unintended consequences to include:

- Increased or continued production of product for which there is limited current or future markets
- Decreased international competitiveness of some of Georgia's agribusinesses
- Increased sense of dependence by farmers on government to solve market and financial challenges whenever market shifts negatively affect them

Although there can be a place for price support systems, there are sometimes better alternatives open to government. For example, with respect to wine, perhaps the best, least cost option is to enforce even more vigorously the laws against falsification of wines within Georgia itself. There are those who suggest that were this to occur, even in the face of the Russian embargo, there would be no shortfall

in demand for all of the country's grape production by wineries producing true wine, not some alcohol based facsimile of wine. A second option might be to provide direct financial payments and/or no cost loans directly to farmers rather than creating artificial prices for wine grapes that distort the market. Then wineries could buy grapes at the true market price and possibly compete with countries like Italy in the sale of lower priced bulk wine on the world markets. A third option might be to assist grape growers to replace existing vineyards with those which are more appropriate to current world markets and/or diversify away from grapes into other fruit or high value crops for which there is a market. Similar options also likely exist for mandarins which has been a target for price support programs.

In light of the preceding, the government might wish to pull together a select committee to develop more optimal approaches to the Russian embargo before the next harvest season for not just wine grapes but commodities like mandarins and certain other fruits and vegetables. It is likely that a number of donors would be willing to finance this effort as well as provide technical expertise.

3.3 Production Inputs

As referenced above, on a number of occasions the government (or the government through donors) has chosen to provide production inputs to farmers. These have included fuel, fertilizer, and seed. (Farm machinery was touched on earlier.) One of the most recent such efforts was the provision of wheat seed this past fall to farmers in the conflict areas of Georgia around Gori and to the west which was overseen by CNFA. What was interesting about this particular provision of production inputs was that purchase vouchers were provided to farmers rather than the actual physical input itself. The farmers then "purchased" seed from local seed suppliers using the vouchers as payment with the supplier then being reimbursed by CNFA. As the necessary seed was not readily available in Georgia, CNFA found a source in Turkey, imported the seed, and then made it available only through the existing Georgian supply system.

This approach was quite different than some input supply programs in the past whereby the physical product was provided directly by government rather than through the existing Georgian supply system. Whenever possible, the approach employed by CNFA this past fall or a variation of that approach is generally preferable. It helps reinforce financial and operational viability of the private sector supply system rather than potentially undermining it. It also

reduces administrative, management, and transportation demands on what are often very limited and over-taxed government resources.

Even if the Georgian supply distribution system is not fully developed for a particular input, the decision by government to distribute a farm production input should be seen as an opportunity to help develop that segment of the system, not just farmers alone. To utilize such an approach will have medium-to-longer term benefits for both farmers and the distribution system.

4.0 Product Quality and Certifications

The importance of a viably functioning national food safety system has already been touched on with respect to its importance for significantly expanding and agricultural exports to the West and countries like Japan. However, there are a broad range of other situations in the food and agriculture sector where quality standards and certifications are equally important. One example is that for organic certification (which is also important for export). Fortunately, this is an area where significant progress has already been made. Caucascert, a Georgian entity with assistance from Elkana and others, has now been qualified to certify whether Georgian agricultural and food products meet acceptable international standards.

Most progress to date, even as limited as it is, seems to be primarily in the area of food products, not production inputs. Yet quality and certification issues are equally important for production inputs as well. In the chapter on wine, it was mentioned that one nursery grower could not export his grape seedlings due to the absence of an appropriate certification procedure and body. It was also mentioned the problems that diseased or unknown variety seedlings caused farmers who purchased them. However, the problem with unacceptable production inputs is not limited to nurseries. There are also instances where fertilizer, pesticides, seed, vaccination medications, and other items do not meet standards or are in some other way not as represented. These problems are sufficiently prevalent that in a recent meeting with farmers, one quarter cited this situation as a major problem. Some even indicated that it was the most significant problem ahead of even credit, farm machinery, and marketing.

Typically, the Georgian government has taken the position that production inputs that are not as represented are an issue strictly between the buyer and seller. Government should not become involved. If a buyer feels a product does not meet represented expectations, then that buyer

can choose not to use this particular supplier in the future, spread the word that this supplier sells defective product, and/or bring legal action against the supplier. On the surface, this seems reasonable. In Georgia, it may not be that simple and straightforward.

First of all, many production inputs the farmer buys are critical to the very survival and profitability of the crop. If the wrong or diseased seed is purchased and planted, if the wrong or substandard pesticides or fertilizer is used, an entire crop can be lost. If the wrong or substandard medications are used, individual animals or even an entire herd can be lost. If any of these things occur, the farmer may be bankrupted or his family may go hungry. This farmer may not even be able the following year to have the option to give or not give that supplier their business since he may no longer be farming. As for bringing legal action against the supplier, most farmers may not have the knowledge or sophistication to do that. They definitely will not have the funds to hire legal representation or, if they do, it is likely to be months if not years before any satisfaction can be achieved.

In light of the preceding, even if government does not have a proactive enforcement program for production inputs, it should have a willingness and capacity to investigate situations in which farmers may have been sold defective or misrepresented product. When this is found to be the case, then there needs to be penalties severe enough that suppliers will be discouraged from doing so in the future. Additionally, for all products—input or food—government should work with the food and agriculture sector to develop appropriate mechanisms and entities to provide the certifications needed to sell Georgia's agricultural output in domestic and international markets. This might be in the creation of private groups like Caucascert, through public-private entities, or by government agencies.

5.0 Credit

As part of the field work associated with the development of this report, meetings were held with Kakheti farmers. In one of these meetings, when asked to rank the greatest challenges or problems facing them, nearly two-thirds said that credit was their single greatest need or issue. This response is consistent with other field interviews conducted in the food and agriculture sector since the Rose Revolution. Thus, in 2009, in spite of a number of donor projects and government interventions, there is still significant unmet demand in the food and agriculture sector for appropriate credit products.

As part of the 2005-2006 strategic planning project funded by USAID through AgVANTAGE, it was roughly estimated that Georgia's food and agricultural sector would require over GEL 2 billion (US\$ 1.215 billion at that time) in order to reach its full potential. This included what was necessary (1) to move farming from its current basic to a more productive level, (2) to put into production lands that were still owned by government but not being rented to farmers, (3) to put into production agricultural lands in private hands that were not being farmed for whatever reasons (e.g., the absence of markets, capital, farm machinery), and (4) to replant aging, less productive orchard and vineyards. This was felt to be GEL 1.35 billion (US\$ 750 million at the time) more than was felt to be available within the system from various sources. Additionally, it did not include the capital requirements of farmers who might wish to expand their holdings by buying new land when it came available or buy from government the land they might now be leasing. It also does not include the required capital for post-harvest businesses (e.g., packing, processing, storage) or for the expansion of livestock and fisheries production. With all these also included, the shortfall might exceed US\$ 1 billion (GEL 1.65 billion today).

No breakdown of this need for capital was done by region as part of that 2005-2006 study. Nonetheless, as Kakheti is estimated to have 30-40% of all Georgian agriculture within its boundaries, then the need for capital in the region might be US\$ 300-400 million (GEL 500-660 million) over the next decade, or US\$ 30-40 million (GEL 50-66 million) annually. While this is obviously significant, given what government has been spending on various of its support programs and given potential donor willingness to help, some significant portion of this might be able to be made available. Two promising options which should likely be expanded include support for the government's 100 Enterprises initiative and its Cheap Credit program available through the Ministry of the Economic Development. However, there are many other possibilities as well.

In the draft strategy prepared in 2006, there were a number of recommendations made. If implemented, all would positively benefit farmers in Kakheti. These recommendations of the draft strategy are summarized as follows:

- Develop a farm credit agency in conjunction with the banking sector that will:
 1. Provide assistance to lenders and borrowers in

- preparation of loan packages
- 2. Become a repository of farm credit information available to lenders
- 3. Develop agricultural loan officers for the commercial banking sector
- 4. Be phased out after agricultural lending is adequately inculcated into the commercial banking sector
- Insure that government agricultural financing initiatives:
 1. Are administered through the commercial banking sector or other appropriate experienced financial sector entities and input suppliers
 2. Require the same loan information and reviews that would be conducted as part of a commercial loan process
 3. Charge appropriate interest rates and have commercially consistent repayment requirements
 4. Do not create unfair financial advantages to recipients
 5. Do not displace or discourage private sector initiatives which might be providing similar financing or financed products
- Develop creative approaches for blending funds from donors, commercial banks, private investors, packers and processors, manufacturer credit facilities, and government in order to increase supply and reduce rates
- Focus financing initiatives on those farmers with more than four hectares or are associated with cooperatives, associations, packers, or processors
- Provide technical assistance to producers wishing to form those type of cooperatives or associations which will be the targets of credit initiatives
- Continue to improve and implement asset registration and foreclosure procedures as well as the laws related to leasing
- Explore other initiatives and mechanisms that might reduce risk to lenders and, thus, rates to borrowers, such as an agricultural land bank, crop insurance, and equipment resale markets
- Initiate an effective program to attract foreign investment into this sector

- Develop an effective public information program so that all segments of the food and agriculture sector are continuously aware of financing options

For a more complete discussion of the credit situation facing the food and agriculture sector, to include that found in Kakheti, as it existed two years ago (and essentially still today), refer to Section 7.4 *Access to Credit* in the draft *Georgian National Food and Agriculture Strategy, 2006-2015*.

6.0 Agriculture Research, Education, and Extension (AGREE)

As part of its ongoing reforms which essentially concluded in 2006, government undertook a major reorganization of the Ministry of Agriculture, the educational system to include universities and agricultural technical colleges (ATCs), and the management and allocations of publicly funded research. As a result, the existing system for agriculture research, education, and extension was eliminated, received reduced funding, and/or was radically reorganized. Presently, there is no functioning government supported agricultural extension service in Georgia. A full understanding is only now beginning to crystallize with respect to how best agriculture should be taught at the secondary and post-secondary levels but is not yet in place. And, a comprehensive strategy for needed agricultural research has not yet evolved. Consequently, any initiatives in any of these three areas (research, education, extension) are essentially being conducted either as part of donor projects or by the private sector (wineries, packers, processors, input suppliers).

This latter (i.e., private sector responsibility) is generally consistent with Georgia's strong free market orientation. Essentially it has been felt within government that extension should be paid for by either the farmer or others such as input suppliers and product consolidators/processors. There was no need for government involvement. The belief was that, given sufficient demand, a farm consulting industry would surface to meet the needs of farmers or farmers could research issues on their own. Yet, the fact remains that if farmers do not have funds to buy proper seed, fertilizer, pesticides, and farm machinery, they will unlikely have funds to pay for consultants. Yet there can be an extremely high benefit-cost ratio to certain types of extension which make recommendations that do not necessarily require additional expenditures by farmers. Without some externally funded technical assistance, the farmer—and, thus, the nation—may never see these benefits or they will be unnecessarily delayed.

There does seem to be an acceptance by government that agricultural education is appropriately part of academic curricula as provided through the public educational system. As a consequence, some positive things have now occurred in public education, to include in the Kakheti region. There are donor projects which have improved the secondary school curriculum in agriculture in general and with respect to specific schools. In Kachareti, with UNDP support, one of the old ATCs has been upgraded with respect to its facilities, equipment, materials, and teaching capacities. However, in spite of these steps, it is not yet fully clear whether the directions that have been taken will sufficiently meet the needs of this sector or for those within specific regions such as Kakheti.

As for publicly funded research, agricultural or otherwise, a totally new approach was devised. Whereas traditionally any such research was conducted through public institutions of higher education, under the new system, each year in the national budget an amount is allocated for research of all types. This is then broken down into categories including that for agriculture. At this point, through an open bidding process, the former research academies, the private sector, NGOs, other government entities, and other educational and research institutions, both domestic and foreign, would be able to submit research proposals for consideration and possible selection. The group which makes the selection decisions is an agricultural committee under the Georgian National Science Foundation. Overall oversight of this process falls under the Ministry of Education and Science. Additionally, much of the tens of thousands of hectares of land upon which agricultural research was conducted in the past by institutions of higher learning has been taken from the public university/ATC system for possible sale or lease to the private sector.

While on the surface, this approach to agricultural research might seem fairer and more efficient than in the past, there are downsides and complexities associated with it. These include the following:

- The uncertainty in how research priorities will be set and programs and projects evaluated and determined;
- How and by whom the research will be supervised to insure it is conducted as it should be;
- How governmental entities can compete if they have no land upon which to conduct research;
- Whether certain types of research do not lend themselves to this approach;
- How activities and results will be shared with competing research groups whose work can benefit

from this interaction to the benefit of the country, to the educational and extension system, and to the food and agriculture sector itself;

- Whether the necessary critical mass, scale, and synergies can be achieved with this more fragmented research approach; and
- How institutional capacity and memory is to be maintained if research projects shift between different successful bidding entities every year or every few years.

While there are ways to address all the problems identified above for research, education, and extension, to date, they have not been. Thus, the food and agricultural sector in Kakheti (as well as the rest of the country) does not currently have the support it needs in each of these areas in order to be able to materially improve production and profitability and compete with countries in the world which have greater support from their governments.

While there is no need to return to those systems in place when the Rose Revolution occurred, there are innovative approaches which can be employed which will enhance what now exists. A starting point within Kakheti would be continued support for and an expansion of the capacities of entities like the Vocation Education and Training Center at Kachareti and the improvement of the agricultural curriculum and teacher qualifications at all levels of the educational system. Additionally, there are activities which can be undertaken to improve extension without the creation of a massive government extension service. These can include public-private and national-local government partnerships whereby extension agents are employees of food processors/packers or cooperatives whereby their salaries are paid for by government with both national and local funds and their expenses (transportation, office, communications, materials) are paid for by the employing entity.

(Note: For a more detailed summary of the issues raised above and possible actions to be taken, one can refer to Section 7.3 *Access to Production and Market Information* in the *Georgian National Food and Agriculture Strategy, 2006-2015*.)

7.0 Business Consulting Centers/Chamber of Commerce

In Telavi the Chamber of Commerce provides business advisory services for a fee. Previously it also provided certification as to “place of origin,” also for a fee; however, this responsibility was taken away by the Minister of

Economic Reform and given to the Ministry of Economic Development, which does this for free. Services presently provided include:

- Assisting on legal matters required to establish and register a new business
- Advising on taxes related to an enterprise
- Setting up appropriate, effective accounting systems
- Preparing business plans
- Conducting educational courses (accounting, computers)
- Helping businesses to set up or participate in product fairs and exhibitions

An exhibition hall is also being opened in Telavi with 30% of the funding from USAID but the balance from local investors. USAID also assisted in the establishment of the business advisory service through the coverage of all its costs in the first year but declining by 20% each year thereafter with the difference being met by fee generated income as well as membership charges.

One of the original objectives of the food and agricultural study for Kakheti was to determine if there were other things the business consulting center might do to help promote or assist in the development of this sector. The following are a range of possibilities which should be considered for possible evaluation, support, and eventual adoption:

- Assist farmers, agribusinesses, farmers cooperatives and associations prepare loan applications
- Conduct agricultural loan disbursement and expenditure verification for commercial banks (see Section 5.0 Credit for other lending related possibilities)
- Provide information in the region as to the details of various government and donor programs as well as the dissemination of the results of feasibility and marketing studies which might be of interest to farmers and businessmen
- Assist farmers, businessmen, and others develop viable business plans for farm machinery “rings”
- Develop certification capabilities in areas that are not presently being provided by government or Caucascert
- Work with AgVANTAGE to develop capabilities to provide HACCP/ISO advise and training at appropriate levels of the food and agriculture sector
- Assist farmers and smaller agribusinesses with export related paperwork

- Assist in the development and/or updating of investment guides for Kakheti
- Provide guidance and assistance to farmers in the establishment of cooperatives and associations of various types, e.g., input supply, credit, marketing, processing, combinations

At this time the Chamber and its business consulting center do not have the financial or staff resources to develop capabilities in many of these areas. However, for some, government and donors might contract with the Chamber to provide certain services, e.g., program information dissemination, the development of farm machinery rings. Additionally, it may be possible to work out mutually beneficial relationships with commercial banks in the preparation of loan applications and/or information and disbursement verification. (Note: There might be a potential conflict of interest if the Chamber undertook both on behalf of a bank.)

The above are likely only some of the possible opportunities open to the Chamber, its existing business development center, and any others which might be developed in other rayons of Kakheti. (Note: It is not clear whether the optimal approach would be to build on the existing center so that it would be able to provide its services even more broadly region-wide or whether a number of separate centers should be established in each of the rayons, with perhaps some specialization and coordination among them.) As it becomes clearer which components of this report's recommendations will be adopted and supported by government, donors, and investors, then other possible opportunities may become evident. Some of these will be able to be undertaken independently; others should probably be in partnership with the Governor's office and/or the Kakheti Regional Development Agency. Donors should support the development of these capabilities whenever possible.

8.0 Investment Promotion

New investment can sometimes come to a region or country which is passive and makes no attempt to attract such investment, i.e., essentially a situation where the investor, completely on his or her own initiative, identifies a possible opportunity, evaluates, and then undertakes if felt to be viable. This may happen in Kakheti and already has to some degree in wine and several other areas. However, to depend on this approach will mean, as a minimum, that development will not occur as quickly as it might otherwise. Potential investors in Georgia and definitely

abroad may not have the time or resources to investigate every geographic area, commodity, or possibility that may have promise. The prospective investor might eventually get to Kakheti, but it may be years from now or, in the worse case, the investor may never come because he or she already found an opportunity, perhaps not as good an opportunity as one in Kakheti if they had known about it, but one which has now utilized all their resources on this other project.

This, then, creates a second problem for the passive region or country. Other areas understand what was just described in the preceding paragraph. Many have developed aggressive and often effective investment promotion capabilities and initiatives thereby increasing the probability a foreign or domestic investor will come to their locale rather than to another which has no such program. With this in mind, Kakheti should develop its own investor promotion programs, both as part of any national initiatives but also independently when that is in the best interest of or for an opportunity unique to the region. This is especially true in the food and agricultural area where investments can often be more difficult and problematic.

Kakheti should develop a comprehensive investor program with four major components: promotional materials, cost sharing programs, investor assistance office, and investor solicitation initiatives. Various possible subsets of each are outlined below:

Promotional Materials

- Investors guide (broader in scope as to conditions in Kakheti)
- Investors handbook (focuses on such things as how to take advantage of various government programs, registering as a company, paying taxes, and important legal issues)
- Sector summary/maps (the investors guide might be for the region as a whole; this would focus more on an individual sector like food and agriculture)
- Specific opportunity profiles with each tailored to have either a:
 - Domestic investor orientation, or
 - Foreign investor orientation
- Specialized materials (for trade missions, targeted contacts, conferences, other)

Public-Private Cost Sharing Programs

- Conduct of feasibility studies
- Investment fund

- Provision of infrastructure
- Land
- Extension
- Research
- Training

Investor Assistance Office

- Office director and staff
- External capabilities (on retainer or contracted)

Investor Solicitation Initiatives

- Trade missions (foreign, to Georgia)
- Targeted individual contacts with qualified foreign firms
- Investment conferences
- Targeted advertising and mailings

A donor or donor project should be sought to work with the Governor's Office, Regional Development Authority, and the Chamber/Business Consulting Center(s) to develop appropriate materials and programs.

9.0 Communications

In meetings in Kakheti, it is not uncommon for farmers to indicate that they would like more contact with government than is now possible so that it can become more aware of their problems, issues, concerns, and needs. This is understandable given how the Ministry of Agriculture has been reorganized without an extensive, continuing presence in all rayons of Georgia. Even when there is a regional presence, Ministry staff may not have vehicles or funding to work extensively outside their offices whereby they might come in contact with farmers more extensively. Additionally, when there are government programs which might be beneficial to farmers, except for radio and television announcements which have their limitations, there is often no effective means for conveying the details of such programs to farmers, answering their questions, or assisting them in taking advantage of what may be available.

Even among farmers themselves, there is often not extensive interaction or cooperation so they might come together to solve problems or take advantage of opportunities of common interest. It is interesting to note that, while over half of all Georgians are working in agriculture (with the number being much higher in Kakheti), money spent on agriculture in real terms has essentially been flat while the overall national budget has been expanding significantly

and agriculture's share of that budget is only a few percent and declining. Were farmers more effectively organized into commodity and industry associations, they would be able to convey more effectively their needs and concerns to government and solve many of these themselves.

As for the activities of government and donors, there is often duplication of programs or an unawareness of what others might be doing in their own field. This occurs in spite of periodic donor coordination meetings and interactions with government. For example, in one instance, it was found that there were over 10 donor initiatives involved in some facet of food safety. However, many of these projects were not aware of what others were doing, some were addressing the exact same issues, the work of one could have been beneficial to the other had they been aware of one another, and there was no one within government or the donor community tasked with trying to effect better coordination and cooperation between all these activities when these activities crossed ministry lines. As a result, there was unnecessary waste and inefficiencies associated with donor efforts to assist Georgia in this particular field. Unfortunately, this is only a single example of many similar situations, all of which prevent Georgia's development initiatives from being as effective as they might otherwise be.

In light of the above, within Kakheti, there should be an initiative to increase communications between farmers and government, between farmers and farmers, between government and donors, and between program managers and the intended beneficiaries. In order to begin to address this more effectively, through the Governor's Office, the Kakheti Regional Development Agency, and the Chamber of Commerce, two programs should be developed and undertaken. The first and easiest of these is the establishment of a Regional Development Council which will have members from all donors active in Kakheti (or who might become active), the Ministry of Agriculture and any other key government ministries, and the private sector to include farmers associations.

This latter—farmers associations—are the second program that should be undertaken in the near future. These would not be like or function as farmer cooperatives. Rather they would be commodity or industry interest groups which would meet to identify, define, and work towards solutions to key issues and opportunities of importance to their respective commodity or the food and agriculture sector as a whole within the region. As referenced above, these associations might find ways to address issues effectively without outside involvement. However, as appropriate, they might send delegations to the Ministry of Agriculture,

Parliament, the Chancellery, or donors in order to enlist their support. Over time, the farmers associations in Kakheti might partner with other regional entities to create an even more effective and influential national association.

10. Public-Private Partnerships

Throughout this report there have been numerous references to where it can be advantageous for the public and private sectors to work together to their mutual benefit and that of the nation. These include such things as:

- Provision of farm machinery and input supplies, e.g., seed, fertilizer, fuel (government plus banks, importers, input suppliers)
- Agricultural extension, education, and research (government plus agro-industries, product consolidators, input producers, input suppliers, farmers groups)
- Investment finance and farm credit (government plus banks, farmers groups, agro-industries, product consolidators, input suppliers, foreign investors)
- Product certification (government plus trade associations, private laboratories, NGOs, farmers groups, exporters)
- Infrastructure (government plus private utilities, large agricultural or agro-industrial projects, farmers groups)
- Export promotion (government plus trade associations, farmers groups, dominant or well positioned Georgian companies)
- Policy development (government plus trade associations, farmers groups, progressive individual businesses and farmers)
- Investment promotion (government plus trade associations, farmers groups, promising/progressive Georgian businesses)
- Contracted management (government with professional, technical, and operationally competent individuals and companies)

As may or may not be evident in the above, few if any of these necessarily require joint ownership and investment in the area of mutual interest. Rather in most cases, each party (government and the private sector entity[s]) plays a specific role which is complementary to and supportive of the objectives of the other.

As one reviews the above list, it is evident that there is some commonality of the entities or groupings of entities in the

private sector which are the most logical public-private partners. The most common of these are farmers groups, trade associations, input suppliers, banks, and larger processors/consolidators. Thus, if government wishes to capitalize on the tremendous potential which exists through public-private partnerships, it may wish to develop an office with this as its primary objective. Within that office would be specialists in each of these major partner areas (e.g., farmers groups, input suppliers) who focus on identifying the most desirable and promising possible partnerships and then working to bring them to reality. There is extensive body of work available through major international donors which illustrates the potential and challenges associated with public-private partnerships and how best to take advantage of them. Again, this may be an area where donor support—financial and/or technical—could be secured.

