# Agricultural Labor market in Imereti

For the project "Improving Formal, Non-formal and Informal Vocational Education for the Agribusiness in Georgia"

**5/9/2016**

# Contents

# Executive summary

This research was conducted within the context of the TVET Imereti Project for PiN's "Improving Formal, Non-formal and Informal Vocational Education for the Agribusiness in Georgia" project. The project is intended to improve the linkages between the labor market demands of the agribusiness sector, and the skills and qualifications offered by the formal, non-formal and informal Vocational Education and Training (VET) institutions. This goal will be achieved by achieving the following objectives:

1. Improvement of partnerships between VET providers, private agribusiness and other social and governmental partners,
2. Improvement of the quality and availability of agribusiness labor market information for all stakeholders,
3. Introduction of innovative technologies for improving the quality and accessibility of VET,
4. Raising the profile of VET amongst secondary school graduates, farmers and unemployed persons.

This research aims to provide the first building block for the second objective.This research should also support progress on other objectives;an understanding of the current demands of Imereti's agribusiness market and the nature of its connection with the VET can only help with developing of relevant partnerships (objective 1), identifying the appropriate technologies (objective 3), and improving the effectiveness with which we connect the VET education to jobs, which offers the best strategy to market VET to the students (objective 4).

The employment situation in rural areas across Georgia is grim. While the region of Imereti only has 10% unemployment according to the official statistics, most of its 'employed' are in reality working in extremely low productivity (often subsistence) agriculture, which may produce an output that yields as little as 20% of the median national wage. If such agriculture is the only source of income for a household, then the household most likely will be living in poverty. Moreover, only 1 in 5 people in rural areas have salaried employment.

It is hardly surprising that 'employment' is the greatest concern for rural populations and the most important political issue in the country. Therefore, it would also be logical that a significant proportion of the population would heavily base their educational choices on its resulting prospects for well-paid employment.

Given the above, it seems counterintuitive that VET education in agriculture is not more popular. By most accounts, the agricultural sector is growing quickly, with large government and international donor support. There has also been quite a significant increase in both spending and focus on VET generally by the national government. Most recently, the Prime Minister made investing in VET education to improve employment prospects outside of Tbilisi one of the four components of his new national reform agenda.

However, when we examine the current reality of VET in agriculture, this lack of popularity becomes less puzzling.VET in agriculture suffers from low rates of formal employment, a reputation for poor quality, and relatively few VET programs across the country.

The struggle to employ graduates is partially attributable to the profile of Georgia's agricultural sector, which generates limited number of salaried agricultural jobs.Small farmers account for most of Georgia's agricultural productivity.They are both unlikely to undertake formal multi-year education programs and to hire additional employees other than seasonal laborers, as they primarily rely on their household for labor. Thus, despite development analysts' much repeated statistic that over 50% of the country is 'employed' in agriculture, the sector has had chronically low levels of formal, salaried employment. As a result, the sector holds little appeal to most students who want*salaried* employment.

The extremely poor reputation of both, general and agroVET education amongst prospective students and employers further discourages participation. Students often consider VET as an option that is only taken by those who are not smart enough to go to university.As a result, fewer strong students choose to enter the VET process. Employers who do have salaried positions are rarely aware of the available VET programs, or hold a negative perception about them (at least initially) and therefore, graduates are at a disadvantage for hiring. This negative cycle is further perpetuated by the paucity of relevant VET programs for agriculture.

As a result, VET in agriculture has largely failed to develop. This research has therefore set out to identify the nature of the hurdles with greater details and suggest strategies by which they can be overcome. At its core, this research seeks to address three main questions:

- What are the educational needs of the vast majority of small farmers and, if they will notemploy VET students directly, how can both formal VET andinformal VET be developed to better connect with them?
- What are the VET needs of more commercially-oriented farmers?
- What is the interest level of prospective students and how might VET better reach out to students on this subject?

These questions were also considered while analyzing current agricultural VET provision in Imereti region and the ways that our VET partners may be able to develop their projects to better connect with the market needs.

**What are the needs of small farmers?**

To assess the agricultural needs of small farmers we took three different approaches. First, we looked at the sector as a whole to approximate a general profile of Imereti, in particular – the likely needs from first principles. Second, we spoke to farmers directly in a survey of 154 small farmers.Third, we interviewed cooperatives, which also served as a possible vehicle to connect to farmers with a more commercial orientation.

Small farmers are not an obvious target market for our partner VET institutions at the current time because they are not interested in long-term formal education, as both previous research suggested and this research confirmed. Yet, analysis of small farmers is still critical, as they desperately need to improve their skill-sets to unlock significant productivity and income gains for themselves and the country. This improvement will most likely happen by educating them through informal VET and through indirect connections to formal VET.

Based on official statistics on agricultural output, Imereti is a large agricultural producer in a range of different sectors/sub-sectors, particularly cereals and plants - including 27% of the nation's corn, 21% of its melons, 17% of the nuts, 15% of the hazelnuts and 11% of the other fruits. It also produces 17% of

Georgia's cattle, 18% of the poultry and 15% of the pigs. Most individual small farmers will be growing several crops and raising animals, particularly cattle for milk. Therefore, the skill-sets required for the majority of Imereti's farmers are wide ranging.

Our survey of farmers, did, however, offer a somewhat narrower basket of crops and livestock activities. This is mainly due to the specificity of the region related to the climate, small size and quality of the land-plotsand general 'rule' of farmers following the example of neighbors and engaging in the similar sector.The top agricultural products identified by the surveyed farmers were grapes (29%), livestock (28%), grains (16%), vegetables (11%) and poultry (9%).

The expertise required improving productivity for both the crops and the livestock is vast.For crops, they need expertise on how to select the right crops, when and how to plant, what fertilizers and pesticides to use, when and in what quantitates, how often and how much to irrigate, proper pruning, and when and how to harvest, etc. Some of these categories are generic, whileothers are specific to particular crops. For livestock farming, farmers need to understand the basics of animal husbandry, including feeding for milk and meat maximization, animal treatment and proper winter accommodation as well as disease prevention and control.

In fact, part of the challenge in determining how to better train small farmers is prioritizing these vast needs. The trick may be to have relevant experts identify the one or two most important impediments to productivity improvements for each activity.

Despite these vast needs, our surveyed small farmers conveyed little interest in undertaking long VET courses, consistent with our other experience in other projects. There is interest, however, in some formal study. Around 18% of respondents indicated that at least one person in their household would be interested in studying a short VET agricultural course if it was high quality and accessible. About half were prepared to attend full-time courses, and another half preferred part-time, but almost everyone wanted the courses to be less than a year, and most would like them to be a few months or less.

Thirty-seven percent (37%) of those we interviewed said that 'advice from the agricultural experts' was the service that they most desired. While the first specialist named was either an agronomist or veterinarian, the second was often more specialized and given the range of activities in Imereti, quite diverse - from beekeeper to plant grower,winemaker, tea grower, etc.

**Connecting with small farmers**

It is important to understand how small farmers gain their information, so that informal VET can work to better leverage those channels of communication. Surveyed farmers reported getting most information from friends, neighbors or TV.Veterinarians are also an important source of information:in the survey, 43% mentioned the local veterinarian as one of their top three sources of information and almost every farmer uses one at some time.Other traditional sources include the farm supply shop (35%) and municipality (24%).The internet and Ministry of Agriculture's local-level Information and Consultation Centers (ICCs) were used less frequently, by 19% and 14%, respectively. More generally, almost everyone uses veterinarians at one time or another.Of newer information sources, SMS was overwhelmingly popular – 69% of farmers embraced it;all others were distant choices (18% Facebook and 8% through a dedicated website).

Because of the importance of veterinarians as a source of information, we asked extensive follow-up questions about how people currently work with veterinarians. Government vets provide inoculations

but for other animal sickness issues most people use private vets. The vet that a farmer uses is usually as physically close as possible: 47% of our interviewees stated that they use someone from within their own village or another nearby village, while 42% said that they use someone from somewhere else in the municipality. These local vets are often paid in-kind with agricultural products rather than with cash. They are generally older.Farmers indicated a strong local need for more of them.Unfortunately, the low level of cash payments means it is difficult to assess whether communities could support much expansion in provision if done as a private business.

Only 18% of the surveyed farmers indicated that anyone in their household would be interested in any form of formal VET training, even if it was appropriate, convenient and of high quality. This is not surprising. Small agriculture in Georgia is low input and low output. There is little faith that farming can produce a real and reliable livelihood and farmers loathe to risk resources that are in extremely short supply. However, there clearly is a significant minority who is interested to professionalize. Obviously, this group is the most interesting target for improvements and it is worth taking a moment to think about what distinguishes them from the rest of the agricultural sector.

In general, farmers are a better target for development if they have alternative sources of revenue, if they have decent land-plots and if they want to be farmers. First, we know from previous research that people are generally loathe to borrow money to make any kind of investment unless they have non-agricultural incomes to cover the debt. This approach is entirely rational, as agriculture in Georgia is unreliable. Moreover, crop investments are subject to unpredictable weather conditions, animals are subject to disease and injury. There are three main sources of non-agricultural income in rural households. Roughly one-third of households report that they gain income from salaried employment. About 12% receive money from family living abroad and about the same percentage receive money from family living elsewhere in the country. But the biggest source of money is pensions: about two-thirds of households include a person gaining a government pension.

Apart from income profile, quality of land is also an important consideration. If the land has fruit or nut trees, or if it is connected to working irrigation, is contiguous and close to the home, all contribute to its value and can make further investment a more rational choice.

However, perhaps the most important issue is interest. GeoWel conducted a study for World Vision, which involved focus groups in schools across various regions in Georgia that revealed a highly negative attitude towards farming.Almost none of the participating students saw any meaningful prospects for those choosing to remain in rural areas and fewer still viewed agriculture as a potential opportunity.

All of this highlights one simple realization: even in the small farmer sector, the groups that are most likely to try to commercialize are not the poorest groups. Truly subsistence agriculture representatives in Georgia, particularly single pensioner households or households with no employment, no remittances and no pensioners, are unlikely to find the resources or the time to significantly improve their situation. For this group targeted social assistance is probably the only short-term route out of poverty.

Yet, if we accept that there is another group with sufficient resources, who wants to develop, is willing to invest and also wants to improve the training of the small farmers, how is a VET college supposed to find them? One option is to identify them through cooperatives. Cooperatives can be a useful mechanism for connecting to smaller yet commercially oriented farmers. Cooperatives are easy to locate and offer scale, already gathering together motivated farmers who are also more likely to be inclined to invest in growing their production.They are often specialized in one particular area, such as

beekeeping, hazelnut growing, pig breeding etc., which makes it more efficient to connect farmers to relevant courses.The cooperative may also be able to harness more resources or, at least, by virtues of pooling the resources of a number of farms in one organization, they may have sufficient concentration to invest in skills that an individual farmer could find prohibitive. For all of these reasons, we consider the cooperative sector and their likely VET need provision below.

**VET interest and needs of cooperatives**

In Imereti there are 114 registered cooperatives; 36% of these are connected to crops and plants (including greenhouses), 26% are connected to beekeeping and 16% are in livestock. There are also three or four cooperatives for poultry, wine, dairy and hazelnuts.

For this research, we interviewed 17 cooperatives across a range of sectors and sub-regions, with a focus on sectors in which our partner organizations conduct courses. Most had been created in the last couple of years in order to gain matching funding from the government for agricultural investments.

Unsurprisingly, therefore, there is a wide range of levels of engagement and interest.A common complaint amongst the cooperatives is that there are only 2 or 3 active participants, even if the cooperative is formally larger.As cooperatives are still composed of small farmers, predictably, they are not generally looking to hire people, except for seasonal laborers or service staff like vets or tractor drivers, as needed.

Amongst the interviewed cooperatives, veterinarians - particularly specialist vets and tractor operators - were identified as the most needed professions. This need was consistent with our survey of small farmers.Yet, cooperatives did express more interest in training. Unfortunately, cooperatives also have a very negative view of VET and little awareness of the courses that are available; in principle, however,they are more prepared to work with VETs.

**VET needsofcommercial agricultural businesses**

The project knew from earlier research[1] that the majority of small farming in Georgia has limited interest in formal VET. While there may be some space for using VET for improving the skillsets of existing farmers, there is little or no use of paid, trained agricultural professionals in this area. Therefore, our focus has been on the smaller group of commercial agricultural businesses that offer salaried employment.

To analyze this segment, we began by compiling a list of agricultural businesses in Imereti. There was no single source that seemed close to complete. GeoStat's list of agricultural 'registered and active companies' missed many registered businesses that we found through conversations with the Information and Consultation Centers (ICCs), the municipalities, and local contacts. Altogether, we compiled a list of 337 businesses. Four of these are categorized as large, 23 are considered medium-size businesses, and 151 are small. The remaining 157 were not classified as the GeoStat list did not always indicate size and the other sources almost never did.

Almost half of the businesses are involved in direct agricultural production:about one-third of Imereti businesses are livestock businesses, roughly a quarter are involved with crops and plants (including greenhouses), and 5% are fisheries.A quarter of businesses are involved in food processing (including farms that also do processing), while 13% provide agricultural services including tractors.

[1] See, for example, the GIZ Labor Market Mismatch study 2010, conducted by GeoWel Research

From this list, we conducted 40 interviews, targeting the larger agricultural businesses. These interviews were intended to provide assess the precise professions that are in demand, as well as the exact skillsets needed within each profession. These interviews revealed high demand for agronomists, veterinarian and animaltechnicians, as well as food safety experts and a wide range of technical skills related to food processing and relevant machinery.

For the professions that were demanded, out of the 40 larger companies that we spoke with, 10 (particularly farm service sectors and processors) wanted general 'agronomists', 7 wanted veterinary service specialists (though this is actually slightly complicated and will be discussed more below), 6 food processing plants wanted food technologists, 5 mentioned technology and equipment specialists, 4 wanted food safety specialists and 4 wanted production safety specialists. There were 3 mentions for each of farm manager, marketing and refrigeration experts and electrician and 2 mentions for beekeeper, fishbreeder and lathe operator.

**Skills assessment**

In the interviews with the larger companies, we also inquired about the specific skills needed for the agricultural professions demanded, as well as those already provided by the VET centers. The questionnaires assess the importance of the 'universal skills' -including personal characteristics, working skills, background, general professional knowledge, language skills and managerial skills, as well as profession-specific skills. The list of universal skills was developed as a result of discussion with businesses and by looking at VET professional standards; the profession-specific skills were developed exclusively by summarizing from the recently developed professional standards for different professions.

We completed 46 skill-specific questionnaires by asking 34 businesses about 14 different professions identified as needed by them.The professions included animal keeper/veterinary service specialist, food processing specialist, plant grower, beekeeper, agro-logistics operator and various forms of technician.In addition to these structured questionnaires, we asked respondents to list the top 3 to 5 skills that they consider essential for entry-level employees.

Beyond assessing skills demanded, the skill mapping exercise was intended to also assess experience with VET graduates in that area. We were not able to fully assess current VET provision of the skills since many employers had no experience of VET graduates in most of the professions.This analysis did, however, yield rich details about which skills are deemed important and which ones employers experience in VET graduates.

Of the universal skills, characteristics such as hard work and diligence were the most highly prized, both in the structured survey and open-ended interview.Unfortunately, the small group that had experience with VET students did not identify them with these skills.Rather, at 43% these skills were the least noted characteristics of the VET students by employers.'Specific professional skills' (as an overall category), and overall 'professional experience' were the next most desired skills.Yet, VET student were not considered to possess these consistently (less than one-third).Language skills in English were not considered important by most respondents(about one-third chose English, one-quarter – Russian).Generally, managerial skills were not in demand.

An illustration of the disconnection between the VET programs and the skills demanded by employers is the relative value placed on general profession-related knowledge.Agricultural VET programs consider

this skillset important.However, respondents emphasized good sanitary practice, safety and first aid as fairly important, but assessed that less than one-third of VET graduates had them to a high degree.

Finally, we asked in more detail about managerial skills. While the general category of 'managerial skills' had not been considered important for new employees, employers identify certain tendencies as important, including the need to 'work on one's own professional development','maintain up-to-date knowledge', 'maintain records' and 'communicate results of work'.In almost none of these areas did the interviewees believe that VET graduates excelled.

In specific professions, there is probably not sufficient space to give much of an overview here. We asked about 14 different professions and not only asked people to assess the importance of skills that were listed in the professional standards, but also to provide any other skills that they felt that the professional standards missed.

In general, across all 14 professions that we spoke about, two conclusions can be generally drawn. First, businesses put more weight on practical skills rather than theoretical education.This is consistent with the prioritization of professional experience, and helps explains some of the mistrust for formal education generally and the importance of certain 'attitudes to work'. Overall, it is considered better to have someone with almost no knowledge, who is hard working, diligent and eager to learn, than someone with lots of knowledge, but who lacks these dispositions.

The second general conclusion that can be drawn is that with the exception of 'overly theoretical' knowledge, the professional standards seem to have generally got the skill-needs right. This is not as obvious as it may seem. When in 2012 GeoWel implemented similar research to the research conducted here, in relation to the tourism sector in Ajara, it was found that many employers said that many of the required skills in the professional standards were useless. The fact that we did not find that conclusion in this case, at least suggests that the professional standards are generally oriented to the market.

When discussing with livestock and poultry farmers, we found that what they were looking for was someone with a highlevel of veterinary and animal care skills. Amongst the skills prioritized, disease prevention and treatment as well as animal feeding were priority skill and knowledge areas.Grazing supervision and artificial insemination were not considered priorities.

Food processing specialists were generally expected to be versatile in their ability to learn how to use different machinery. However, in terms of specific skills and knowledge, the six businesses that we spoke to considered most of the skills that we listed to be essential.

When asking about plantgrowers, one of the surprises was that greenhouses are generally uninterested in hiring plantgrowers, though they do want technicians. The most valued knowledge for a plantgrower is knowing seed quality and class identification standards. After that, knowledge of fertilizers, pesticides and weed management and proper procedure for harvesting were the high priorities.

As with many other professions, practical skills in beekeeping are more valued than businesses knowledge. Only 1 out of 4 businesses said that knowledge beekeeping legislation was essential. In terms of skills, all 4 businesses said the two essential skills are arranging beekeeping farms and determining the amount feed stock. In the discussions with the beekeepers, they were also saying that "love for bees" and "love for work" are important in this field, as well as high standards of hygiene.

**Student interest levels in VET education**

The final part of this research is a survey and focus groups with the students from the final three years of high school in Georgia. This was intended to assess their interest in VET and agriculture as potential professional paths, and the reasons for their level of interest.

Only 9% of the students interviewed were considering continuing their education in VET. A very small group were expecting to either start employment or start a business. This 9% is a fairly high number to say that they were thinking of VET, but none of them had a clear idea where they would study.Also, consistent with our focus groups, VET was generally a path considered by those who did not consider themselves to be very good academically.

The specialties that the students wanted to study were wide ranging, but law, teaching, medicine, and business management were the most popular. Only 2% wanted to study agriculture.

Studentsgenerally had made a decision about where and what they wanted to study as a result of either a recommendation from family or friends, their judgment about the employment prospects associated with that field of study, or the status of the subject.Out of the group we spoke to, only 17 (9%) wanted to go to VET, amongst whom hospitality and nursing were the most popular professions, where only one person chose agriculture.It is, however, hard to draw broad conclusions from such a small sample.

Knowledge of VET was also not very high amongst all students. Half of the students interviewed said that they did not know anything about VET at all. Of those knowledgeable about the availability of VET, one quarter did not know that there was VET training available in Imereti.

Curiously, on their assessment of VET, they were fairly positive, at least when answering standardized questions. In particular, students seemed to feel that you got a good practical education and that it left you fairly employable. They were more skeptical about whether the resulting job would ever pay a high salary or come with status.The focus groups confirmed the feeling that while many people thought that VET serves a purpose, it was generally not seen as something that a good student would consider.

Our research shows that respondents have very limited information about availability of agriculture courses at VET institutions. Only respondents from Samtredia town had heard of the Didi Jikhaishi College, which provides courses related to agriculture. No respondent knew that Iberia College or Akaki Tsereteli State University was providing agricultural VET programs. This is not surprising, since so few of them had suggested that they have any interest in studying agriculture.Yet, students may not consider agricultural VET because they are not aware of options available. Even in Samtredia district, only few students could name the Didi Jikhaishi college, and in other municipalities very few school students could name a VET center that provided agricultural programs.

Not only have people not heard about agricultural VET, but rather like the small farmers that we surveyed, there is also a fairly common feeling that agricultural VET is unnecessary. It was fairly common for people in focus groups to argue that if you wanted to go into agriculture, you did not need training.

Students in focus groups were most positive about VET usually when they already knew people who attended VET centers, and/or when they were aware that the VET center management have helped the person find employment. However, as in the private sector, we also heard plenty of examples of students highlighting that they know people who do not get very practical training.

Yet, students' opinions are more wide-ranging than farmers.While some associate it with poor students – suggesting that good students would not go into VET – there are counter-examples to this, and some students seemed to acknowledge that studying in vocational education might be a more reliable route into a job.

Finally, we asked students which sectors had the highest levels of employment. Agriculture, teaching, medicine and banking were the four most identified categories. The very high ranking for agriculture may reflect the fact that government officials often cite the sector for its high employment because nothing else in our report suggests that people thought that way about the sector. But it could be something to work with. The rest are unsurprising, particularly teachers and nurses as, in rural areas, those are some of the most visible jobs.

# Methodology

This report is the second piece of research for the PiN's project "Improving Formal, Non-formal and Informal Vocational Education for the Agribusiness in Georgia." The first piece of research concerned the private sector engagement strategies for the project partner VET institutions in Imereti. This report focuses on the labor market mismatch. Given the complementary topics, research for the two reports involved many of the same respondents.

The research started in November 2015 and lasted until the end of February 2016.In addition to reviewingthe relevant existing data and reports, GeoWel collected data from four key populations crucial for understanding the labor market supply and demand in Imereti.To map the skills in demand, GeoWel conducteda phone survey of agricultural businesses in Imereti (these were the businesses with whom we had already conducted in-depth interviews for the Private Sector Engagement report), surveyed 154 small farmers across Imereti and conducted 17 in-depth interviews with agricultural cooperatives in the region.To gain a snapshot of the emerging supply, GeoWel conducted a face-to-face survey of 200 students and 10 focusgroups with additional 96 students.

From the existing research on labor market mismatch in Georgia, three reports provided much of the foundation for this research effort: 1) the 2010 GTZ report "Matching Vocational Education in Georgia with Labor Market Needs," written by GeoWel Research; 2) the 2011 GIZ (formerly GTZ) report on VET education and tourism sector in Adjara, also written by GeoWel Research; and 3) The 2015 study of the labor market demand, prepared by the Ministry of Health, Labor, and Social Affairs of Georgia. The 2010 GTZ report was useful in terms of identifying the trends in the Georgian labor market and how the VET has historically responded to the challenges. The 2011 GIZ report was specifically about tourism sector and we used this sector-specific experience and adapted it to the agricultural sector in Imereti. Specifically, we adapted the skills mapping questionnaires. The 2015 study of the labor market demand is an important document as it provides the regional overviews of the labor market and will be updated periodically. The national VET policy will be based on the findings of these labor studies.

To create the sample set of agricultural businesses for our surveys, we created a database of 335 agricultural businesses in Georgia. Businesses were identified primarily using the data from GeoStat, but also from various development projects that had taken place in Imereti.From this database, we selected the largest businesses for in-depth interviews, prioritizing businesses thatVET centers had identified as their partners. In total, we interviewed40 businesses and conducted a follow-up phone survey with 34 (85%) of them.The phone survey focused on skills-mapping, to deepen the data collected from the in-depth interviews (which primarily concerned the Private Sector Engagement Strategies report). This

phone survey identified the most demanded professions in the agricultural sector and the skills that the businesses value the most within these professions. In total, we collected information on 14 professions (46 entries from 34 businesses - some businesses provided answers for more than one profession).

The student survey sought toassess the level of awareness about the VET sector amongst high school students as well as their career plans. We selected the eight largest public schools in the six most relevant municipalities of Imereti (based on the proximity to the project partner VET providers). In these same schools, we also conducted 10 focus groups with 96 students to gain a more nuanced understanding of the survey results.

To assess how informal VET knowledge is being shared and exchanged among the farmers in Imereti, we conducted a survey of 154 small farmers in 11 municipalities of Imereti (all except Kutaisi). Although the results should not be generalized to the entire farming population in Imereti, it provides a strong indicative picture of the VET situation in the villages of Imereti.Of particular interest was access to formal and informal veterinary services, as it concerned the most mentioned profession by businesses. We followed up with 28 farmers who indicatedthat they used private VET services in their own villages.

To develop a fullpicture of employers' awareness and perceptions about the VET sector, we also conducted in-depth interviews with 17 agricultural cooperatives (15%) out of 114 in Imereti. Agricultural cooperatives are relatively new – most of them have been formed within the past year.We interviewed a good cross-section ofcooperatives– from various agricultural sectors and in all municipalities in Imereti (except urban Kutaisi). This was enough to obtain quite detailed understanding of how cooperatives operate in Imereti and what their challenges are in finding employees with necessary skills and qualifications.

To conduct the surveys, we employed experienced interviewers who had also worked for GeoStat and various survey companies. Respondents were provided consent-forms and the purpose of the research was explained. Once the data entry of the survey was completed and reviewed,we called back to about 10% of the respondents to ensure that there had not been mistakes during the data-collection and the data entry processes.

# General Background and Employment Situation in Imereti

Imereti is one of the largest regions of Georgia with 16% of the country's total population[2]and 19% of the country's territory.[3]It is located in the center of the country and includes the country's second biggest city of Kutaisi, which hosts the Georgian Parliament and an international airport. The region is fairly geographically diverse, though is largely concentrated in the low-lands. It includes 12 territorial units: Kutaisi, Baghdati, Vani, Zestaponi, Terjola, Samtredia, Sachkhere, Tkibuli, Chiatura, Tskaltubo, Kharagauli and Khoni. In addition to these 12 towns, there are 532 villages in the region.[4] 48% of the population lives in urban areas, while 52% lives in rural areas.[5] For comparison, in Georgia, in total, 54% of the population lives in urban areas and 46% lives in rural areas.[6]There are approximately

[2] GeoStat (2014) population statistics, available online at http://www.geostat.ge/index.php?action=page&p_id=152&lang=eng (accessed on February 25, 2016)
[3] Regional Development Strategy for Imereti 2014-2020
[4] Regional Development Strategy for Imereti 2014-2020
[5] GeoStat (2014) regional statistics
[6] GeoStat (2014) regional statistics

122,000pension recipients in Imereti[7] (about 17% of Imereti's population) and 71,000 Targeted Social Assistance recipients (about 10% of Imereti's population).

When consideringthe labor market needs, the most important basicstatistics for the region relate to the number and types of unemployment. Imereti's overall regional total indicator of unemployment in 2014 was 10%, compared to the national 12% [8], according to the national statistics;this number, however, includes many people who only do a few hours of agricultural subsistence work per week and as a result, is often not considered very meaningful.[9] As demonstrated in numerous other polls, most of this group would not consider themselves 'employed'.[10]

Therefore, to meaningfully understand the level of unemployment, one has to dive beyond the basic numbers. Unfortunately, there is no official source that provides a breakdown of unemployment data by region; therefore, there is no official statistical breakdown for Imereti.The national-level data can still provide some insight into the employment situation in rural areas broadly, and can offer some basic national conclusions that likely are applicableto Imereti.

According to the national statistics,while the national employment rate is 12%, unemployment is far higher in urban areas (22%) than in rural areas (5%). However, as mentioned above, this rural statistic is assumedinaccurate, as many classified as "employed" are "working" in subsistence agriculture. Of greater relevance to this research, salaried employment engages only around 35% of the working age population nationwide; situation in rural areas is far worse –only 20% (1 out of 5 working age population) inrural areas[11]have salaried jobs.Moreover, previous research reveals that most people ideally want a salaried job and view 'self-employment' options as a less attractive fallback.This analysis reveals a much starker employment picture for rural areas:levels of unemployment are incredibly high and the realistic likelihood of a decent job is very low.

Unfortunately, these national statistics also lack a sectoral breakdown and the sectoral data that is available from GeoStat is insufficient to provide an approximation of the situation in rural areas.GeoStat conducts a survey of 'registered and active businesses', which does provide a sectoral breakdown of those employed in registered businesses. This survey, however, only covers 551,000 (28%) of the active labor force nationwide, and does not include banks,government employees, or most of the subsistence farmers included in the "other" list of "employed."

[7] Social Service Agency (2016), pension-receivers statistics available online at http://ssa.gov.ge/index.php?lang_id=GEO&sec_id=610

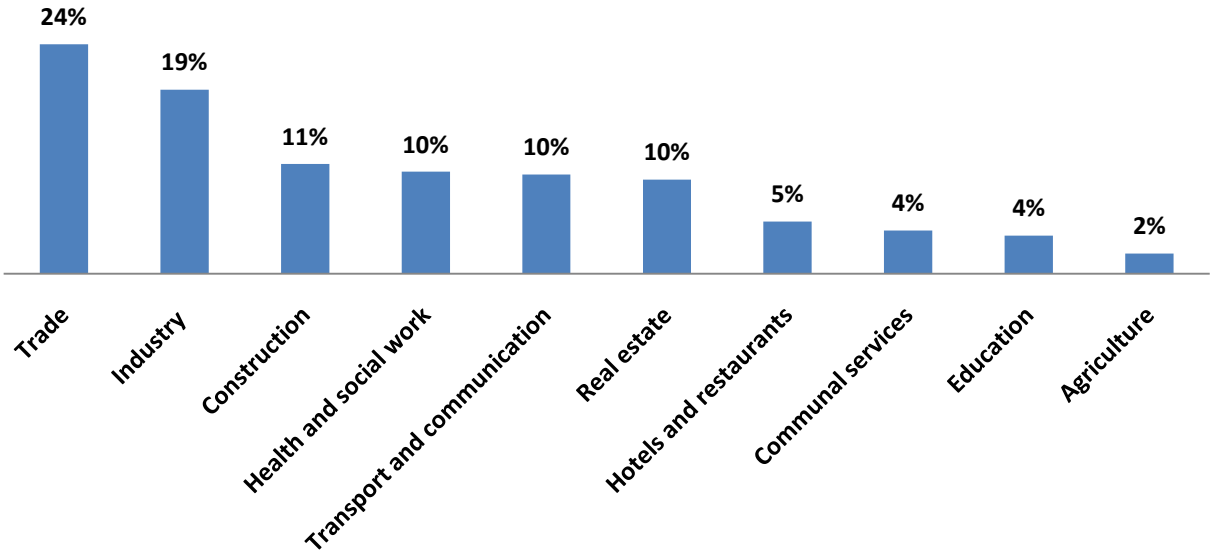
[8] GeoStat (reviewed March 2016), Unemployment Rate for the Regions.

[9]This is not to say that the number is wrong. The unemployment number is consistent with ILO guidelines on measurement of unemployment. It just does not give a sense of 'employment' which is consistent with most people's instinctive classification.

[10] For example, National Democratic Institute (April 2015), Public Attitudes in Georgia, p16 suggests that 67% of national survey respondents answered 'no' to the question 'are you employed'. Given that this includes students, pensioners and house-wives, this suggests around 30% of their survey population are 'unemployed and looking for work'.

[11]GeoStat (reviewed 25 August 2015), Distribution of Population age of 15 and older by economic status in rural/urban areas

Figure 1: Number of employed persons in businesses by type ofeconomic activity in Georgia in 2015




*Source: GeoStat Business Registry, available online at [http://www.geostat.ge/index.php?action=page&p_id=212&lang=eng](http://www.geostat.ge/index.php?action=page&p_id=212&lang=eng) (accessed on February 28, 2016)*

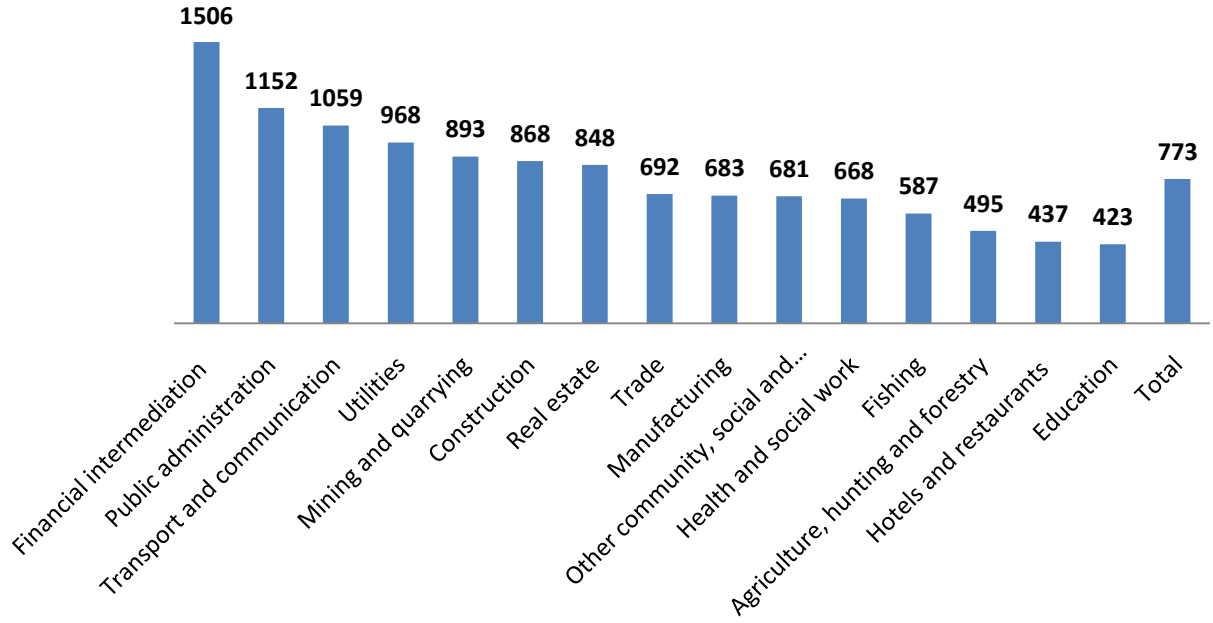
The exclusion of government jobs and banking from this survey creates a significantly incomplete snapshot of rural employment, government is usually the largest employer in rural areas (e.g.,teachers, police and the military, etc.) and banks are often a significant employer as well.

Given these caveats, analysis of the GeoStat data suggests that the distribution of employment by sector in non-agricultural and non-financial registered businesses is similar to the sector breakdown in GDP, with the exception of formal employment in agriculture.According to GeoStat, the number of people formally employed in agriculture nationwide is only around 10,000.[12]

The national-level data on wages by sector offers further data that prospects for a decent living in agriculture are low. Like other statistics, GeoStat's wage data lacks a region-level breakdown.

[12] GeoStat (2015), Business register, number of employees by economic sectors http://GeoStat.ge/?action=page&p_id=211&lang=geo

Figure 2: Average nominal salaries by sector in GEL, 2014 GeoStat business register




Agriculture has one of the lowest salaries of all sectors, according to the GeoStat data.The relatively low salary may be partly because a large portion of *salaried* agricultural jobs are manual labor-type jobs.Of note,with the exception of banking, public administration is the best paid sector and, given the level of employment offered nationwide and its relative security, public sector jobs are highlyappealing.

# Agricultural VET Provision

## *VET provision at national level*

VET education in Georgia can be provided by state or private institutions. There are three types of VET institutions: VET centers, universities with VET programs, and high schools with VET programs. The largest and the most prioritized of these are VET centers, of which 17 are state and 72 are private. The Ministry of Education and Science of Georgia provided us with the detailed data on the programs and the numbers of students at the 16 state VET centers, but the information about the private VET centers and the university VET programs (state and private) are not centrally located.

Figure 3: State and privateVET centers by region. 2015 MoES data

| Region | State | Private | Total |
|---|---|---|---|
| Tbilisi | 5 | 37 | 42 |
| Imereti | 1 | 13 | 14 |
| Samegrelo-Zemo Svaneti | 3 | 4 | 7 |
| Adjara | 2 | 4 | 6 |
| Shida Kartli | 1 | 5 | 6 |
| Kvemo Kartli | 1 | 4 | 5 |
| Samtskhe-Javakheti | 1 | 3 | 4 |
| Kakheti | 1 | 2 | 3 |
| Guria | 1 | 0 | 1 |
| Racha | 1 | 0 | 1 |
| **Total** | **17** | **72** | **89** |

The table shows that most VET centers are concentrated in Tbilisi. Imereti has 14 VET centers, of which only 1 (Iberia college, project partner) is a state VET center. Nationally, state and private VET institutions offer 33 agricultural programs across the country.

In addition to the VET centers, there are 13 universities that offer VET programs in Georgia. In Imereti, 2 state universities that offer significant agricultural VET programs are Akaki Tsereteli State University (ATSU) and the Didi Jikhaishi College of the Tbilisi Technical University. Both of these institutions are partners of the PiN project.

In recent years, the VET sector became priority for the government and international donors. The state funding increased from GEL 6.5 million in 2011 to GEL 35.8 million in 2016. An ambitious VET strategy has been developed for 2014-2020 years to match the changing dynamics of the labor market. The major change in policy is shifting from the so-called subject-based approach to modular VET system.The idea is that in the new system students are not obliged to follow fixed subjects that have been developed by the state. Rather, they can now choose from a number of different modules within a profession, based on their specific interests and specialization, and disregard subjects that theyare not interested in. For example, veterinary specialists will not all study the same subjects, but will have a chance to specialize in poultry, cattle, or other specialties.

As further example, if one compares the subjects and modules of the veterinary service specialist program, one finds that the modular program offers a higher degree of specialization within the program content and is in fact competence-based, compared to the subject-based program, which represents amore theoretical course:

Figure 4: Veterinary service-specialist: comparisonof subject-based and modular VET programs[13]

| Veterinary Service Specialist | | | |
|---|---|---|---|
| Subject-based | | Modular | |
| Profession-specific subjects | Pharmacology and toxicology | Biological characteristics of animals | Mandatory modules |
| | Principles of zootechnics | Diagnostics of animal diseases | |
| | Anatomy and physiology | General prophylactics of animal diseases | |
| | Food and husbandry | Specific prophylactics of animal diseases | |
| | Epizootiology and parasitology | Treatment of animal diseases | |
| | Therapy | First veterinary aid | |
| | Surgery and gynecology | Veterinarian supervision of animal slaughter | |
| | Trainings at the VET | Pasture and water reservoirs protection | |
| | Trainings at the enterprise | Labor safety and environmental protection | |
| General subjects | Entrepreneurship | Food safety | |
| | Foreign language | Biochemical principles of veterinary | |
| | IT and communication | Veterinary activity planning | |
| | | Introductory training | |
| | | Trainings at the enterprise | |
| | | Individual practical project | |
| | | Communication | General modules |
| | | Entrepreneurship | |
| | | Personal and interpersonal skills | |
| | | Quantitative literacy | |
| | | IT | |
| | | Foreign language | |
| | | Cat and dog diseases, their treatment and prophylactics | Optional modules |
| | | Poultry diseases, their treatment and prophylactics | |
| | | Bee diseases, their treatment and prophylactics | |
| | | Fish diseases, their treatment and prophylactics | |

Evolution of the modular approach is occurring through the cooperation with the private sector in such venues as the Sector Councils and the Sector Working Groups. The current tendency in vocational education is towards switching from the currently applied subject-based standardsto competence-based modular professional standards[14] (currently 54 standards exist in Georgia).

[13] Ministry of Education and Science of Georgia (2015), *Database of Vocational Educational Institutions*; National Center for Educational Quality Improvement (2015), *Agricultural Professional Standards*.

[14]Competence-based programs are usually characterized as more practice-oriented than subject-based modules, with focus on what learners can do rather than what courses they cover. Here is a summary from the Australian Chamber of Commerce and Industry ""A way of approaching (vocational) training that places primary emphasis on what a person can do as a result of training (the outcome), and as such represents a shift away from an emphasis on the process involved in training (the inputs). It is concerned with training to industry specific standards rather than an individual's achievement relative to others in the group" (from a GIZ report - https://www.giz.de/akademie/de/downloads/Lehrbrief_14_-_Competency-based_Education_and_Training_(CBET).pdf )

In 2015 only one modular professional set of standards was approvedthere wasin agriculture: beekeeper. Eight other standards are currently under consideration. If we compare the “old” subject-based professional standards to the new module-based ones,we notice several basic differences in the structure as well:

**Figure 5: Comparison of subject-based and modular VET professional standards. Summary of analyses of "old" and "new" occupational standards**

| Criteria | Subject-based programs | Modular programs |
|---|---|---|
| **Program Structure** | • Professional subjects<br>• General subjects (Ex.: computer skills, foreign language skills, communication psychology, principles of entrepreneurship) | • Mandatory modules<br>• Optional modules (Ex.: operating a tractor, operating other equipment)<br>• General modules (Ex.: communication, entrepreneurship, personal and interpersonal skills, quantitative literacy, IT, foreign language skills) |
| **Document structure** | Lists knowledge and skills without any logical sequence by the following categories:<br>• Knowledge and comprehension<br>• Applying knowledge into practice<br>• Conclusion skills<br>• Communication skills<br>• Learning skills<br>• Values | Lists professional knowledge and skills categories with logical sequencethat are further subdivided by detailed practical skills:<br>• Labor safety and environmental protection<br>• Quality assurance<br>• Professional development<br>• And various professional skills categories based on the activity type<br>Further it lists:<br>• Personal qualities<br>• Equipment and tools<br>• Future tendencies |
| **Sector Working Groups members' lists** | Not included | Included |
| **Assessment standard and process description** | Not included | Included |
| **Evaluator instructions** | Not included | Included |
| **Evaluator record forms (knowledge, process, product or outcome)** | Not included | Included |
| **Competence evaluation form** | Not included | Included |
| **General framework document** | Not included | Included |
| **Knowledge and skills** | Very detailed list but almost without any logical sequence and with very little grouping of related skills, therefore it was very hard to regroup them for our skills mapping questionnaires.<br>Differentiates between skills and knowledge but these are basically the same – "knows how to do something activity" vs "does that something activity." | Grouped according to professional activity, and more precise differentiation between knowledge and skills. Makes it easier to develop skills-mapping questionnaires. Appears to be more practical and skill-based, although it also involves a number of knowledge-based topics. |

To sum up, the overall structure and content of the new modular standards mean they are not only more comprehensible for the learner and better present what the program has to offer, but can also

easily serve as a principal guide for the evaluator. Moreover, each program level is designed based on the direct advice of employers and experts.[15] Modular programs also require more involvement from the VET teachers in curricula development and evaluation.[16] Both Iberia and ATSU plan to launch modular farming programs in 2016.

## *Agricultural VET providers in Imereti*

PiN's project partners providing agricultural VET courses in Imereti include Iberia Community College,Akaki Tsereteli State University Faculty of Agriculture (ATSU) and the Agro-engineering and Food Production Technology College which operates under the auspices of the Georgian Technical University in the village of Didi Jikhaishi (Samtredia); this institution was not a project partner initially but has recently become one as the research showed that it plays an important part in providing agricultural VET education in the region. This section will discuss these institutions in detail.

**Iberia Community College**

Iberia Community College was established in 2006 following the reorganization of the sewing and modeling lyceum. Since 2007, the college expanded to Baghdati and, due to its specific geographic location, in 2009 began to offerbeekeeping and decorative plant growingVET programs.In total, the two branches of Iberia Community College have 489 students, of which 15 study beekeeping and 6 study decorative plant growing, all in Baghdati. The youngest beekeeping student is 21 years old.

Although only about 4% of Georgia's beehives are located in Imereti, beekeeping is a fast-growing sector that is often supported by donor projects. The practice requires a fair amount of technical knowledge and training, thus providing a good opportunity for relevant VET programs.

In a focus group we conducted with Iberia VET students, five were from Baghdati city, two were from a village near Baghdati and one was from Kutaisi. Six of the eight students held university diplomas and only two came with solely a high school diploma. Participants in the focus group were primarily people who already had small, family-owned beekeeping businesses or were planning to establish one in near future. These findings highlight the fact that individual families see value in VET education provision in their respective fields. Often students partook in VET not necessarily in anticipation of obtaining new knowledge and skillsets, but rather to receive a certificate that might come handy for their family businesses should they apply for agriculture-related grants.

Iberia CommunityCollege actively cooperates with private companies and international organizations, among them are UNDP, USAID and NRC. As for partnerships with private organizations they have agreements with 100 mostly large enterprises, including three in the agricultural sector(all of which are individual entrepreneurs). As mentioned before, the total number of students at Iberia CommunityCollege is 489, of which 21 are in agricultural programs. Currently, Iberia CommunityCollegeoffers twoagricultural programs to students, both of which are available in Baghdati and are subject-based rather than module-based (from 2017 every program will be module-based). This involves extensive work for the teachers but offers a more concrete and efficient learning experience.

[15]We will discuss the process through which this formulation occurred later in this paper. Our next paper will consider

[16] Interview with Ketevan Kintsurashvili, Dean of Agrarian Faculty at Akaki Tsereteli State University in Kutaisi (December 2, 2015)

Moving forward, the college plans to add more agricultural specialties including farmer, fruit processing specialist, milk processing specialist, veterinarian, heavy machinery operator and seedling farm specialist.

In terms of infrastructure, Iberia CommunityCollege has a good quality facility in Kutaisi which is currently being renovated. The Baghdati branch also has a fairly modern building equipped with the necessary equipment. Iberia CommunityCollege has also begun construction of a dormitory for students in Kutaisi, with plans to do the same in Baghdati. In Baghdati they also recently received government funds to build a farm with 20 cows to provide practical training for students studying milk processing.

An issue regarding the technical base of the college is that it lacks a library with materials accessible to the students and that the computer labs currently lack internet access, though the latter issue is expected to be rectified soon. Moreover, beekeeping equipment is outdated and unsuited for proper practical studies.

**The Agrarian Faculty of Akaki Tsereteli State University (ATSU)**

The agrarian faculty, which offers VET courses in agriculture at ATSU, was formed in 2011 through a merger with the former Sokhumi Subtropical Agricultural State University. In total, there are 430 VET students at ATSU, spread across various faculties. The Agrarian Faculty offers 10 specialties, only six of which are related to agriculture (others are not related to agriculture and the faculty said that they can, in principle, open any program that they want to open). Only two of the faculty's programs have managed to attract students: agricultural logistics (levels 4 and 5; 60 students in total) and hydro-construction technician (15 students). In addition, the business administration faculty of the university offers courses in agricultural management (currently attended by 30 students). We checked the National Assessment and Examination Center (NAEC) data and for 2015-2016 years ATSU had announced only 7 programs, three of which are agricultural programs (two offered by the agricultural faculty and oneoffered by the business faculty).Other programs do notfunction as the university says that there had been no demand when the programs were open. ATSU is also considering adding agricultural courses including farming, gardening and beekeeping.

It is notable that VET students are often young people who failed university entrance exams and were instead offered to study at VET programs. Fifteen of the 60 VET students from agricultural logistics programs of two levels either currently study at a university or already have a degree, usually one related to either agriculture or logistics.

In terms of infrastructure, the agricultural faculty is a separate entity from the main ATSU complex and is located in a different part of Kutaisi. The faculty building is old and in worse condition than other ATSU facilities, with no heating system, no internet connection and an insufficient number of computers. Teaching materials are often outdated. There is no lab or other facilities that the VET students could use for practical training.

**Didi Jikhaishi Food Production Technology College, Georgian Technical University**

Although the Didi Jikhaishi Collegehas not initially been a project partner, it has become one as it is an important regional agricultural VET education provider with five agricultural programs and 167 students. Specialties offered by the college are: food production specialist, amelioration specialist, agricultural technician, tractor operator and veterinary service specialist. They are also planning to add farming and beekeeping specialties.

In terms of infrastructure, the Didi Jikhaishi College appears to be in a better position than the other two major VET education providers. The college owns 31 hectares of land for practical coursesthat take place during studying process. The building and equipment are old, but there are plans to modernize them. As part of the Georgian Technical University, the college is receiving support from the University for renovation and for construction of a student dormitory. The current dormitory is occupied by internally-displaced persons from Abkhazia.

# MappingLabor Market Needs in the Agribusiness Sector in Imereti

As in the rest of Georgia, Imereti's agricultural sector can be divided into two distinct businesses. On the one hand, there are commercial agricultural producers with considerable investments, large land plots, and some expertise, and who are entirely oriented towards selling to the market, domestically and internationally. On the other hand are the smaller farmers who generally have very small land plots, possessfewer resources for making investments and a lower skill base.

This division constitutes a challenge for anyone looking to design research or policy relating to how to engage with the agricultural sector. For the VET, previous research illustrated that larger commercial producers often want highly trained agricultural experts, but constitute a very small portion of the overall agricultural sector. Rather, most of the agricultural sector consists of very small farmers with little to nointerest in training through formal VET.[17] However, since they constitute the largest portion of the sector, it is important to account for small farmers' needs, as these may be able to bemet, eitherdirectly by informal VET or indirectly through formal VET, as we will discuss below.

Smallholdingfarmers in Georgia have significant similarities in profile. Typically, a smallholdingfarmer's land plots areless-than-a-hectare, spread out over several parcels of land that are not necessarily contiguous, and may not even be in close proximity to one another. These small holdings have a similar profile across Georgia and will generally include 2-5 cows that produce calve in the spring and produce fresh milk from as early as April until as late as October. Calves will sometimes be fattened by the household, but more often will be sold to cattle traders to generate early season cash flow, or slaughtered and consumed as veal. The principle purpose of cattle in Georgia is to produce milk, most of which is consumed raw by children or eaten as cheese. Small holding farms will also routinely have a small number of pigs and chickens. They also will grow crops of vegetables including potatoes, onions, and tomatoes, grapes for making wine andfruit, if the land supports fruit trees. Most of this output is used for home consumption.

Since this group is responsible for the overwhelming majority of Georgia's agricultural production, the national profile of the sector offers a reasonable assessment of the needs of smallholding farmers. For this report, we will supplement this review with primary research amongsmall farmers (survey) andcooperatives (in-depth interviews), the latter of which served as a tool for identifying more serious farmers.

**Agricultural sector profile**

Gaining a detailed sense of the agricultural profile of Imereti from the official statistics is somewhat problematic.Agricultural output data has questionable reliability, as GeoStat and the Ministry of

[17] This has been confirmed time and again, in research that we have conducted at various times across the country. It is also confirmed by the research here, when we talk to small farmers.

Agriculture offer conflicting data. Second, GeoStat bundles Imereti together with Racha-Lechkhumi and Kvemo Svaneti for sampling reasons.These two mountainous regions, however, are quite small compared to Imeretiand unlikely to significantly skew averages.Given these caveats, the official statistics indicate that Imereti is a relatively significant producer of a large number of grains, vegetables and fruits (see the figure below).

**Figure 6: Production of annual and permanent crops in Imereti (in million tons) and share in Georgia's production. 2010-2014GeoStat data**

| | | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| Corn | Imereti | 45 | 67 | 66 | 100 | 64 |
| | Georgia | 141 | 270 | 267 | 364 | 347 |
| | Imereti's share | 32% | 25% | 25% | 27% | 18% |
| Melons | Imereti | 9 | 10 | 11 | 14 | 14 |
| | Georgia | 41 | 43 | 37 | 66 | 86 |
| | Imereti's share | 22% | 24% | 29% | 21% | 17% |
| Haricot beans | Imereti | 0 | 1 | 1 | 2 | 1 |
| | Georgia | 6 | 9 | 10 | 11 | 9 |
| | Imereti's share | 7% | 16% | 13% | 23% | 11% |
| Grapes | Imereti | 25 | 26 | 36 | 37 | 12 |
| | Georgia | 121 | 160 | 144 | 223 | 225 |
| | Imereti's share | 21% | 16% | 25% | 16% | 5% |
| Hazelnuts | Imereti | 2 | 5 | 3 | 6 | 4 |
| | Georgia | 29 | 31 | 25 | 40 | 37 |
| | Imereti's share | 8% | 15% | 14% | 14% | 10% |
| Fruits | Imereti | 17 | 12 | 18 | 17 | 11 |
| | Georgia | 138 | 201 | 201 | 272 | 256 |
| | Imereti's share | 13% | 6% | 9% | 6% | 4% |

The primary labor market needs for production of grains, vegetables and fruits is manual laborersto pick and harvest the product and/or load it onto trucks. For this type of labor the employers or the farmers do not requireany specific skills, except for physical strength and stamina.For hazelnut harvest, there is sometimes a demand for the labor-intensive activity of nut-cracking, however this labor is hired seasonally.

Nevertheless, the sector needs a range of other skills and services aside from harvest-related activities. All of these products require knowledge about the best ways of growing them and particularly, the methodology for sowing, caring for, weeding or pruning, the use of fertilizers and pesticides and picking, as well as strategies to reduce the risk of disasters. This suggests the need for crop-oriented agronomists and probably for specialists in each of the major categories, particularly grapes, hazelnuts and fruits, as they are of such high value. However, currently, there is no clear structure for persons with these skills

to gain employment or salary for advising smallholding farmers.While a small number of salaried jobsexist withlarge producers, for smaller-holding farmersthey need to find an avenue for information communication through the informal sector. This will be discussed later.

Another skilled labor need is tractor drivers to help with planting and then with harvesting, to collect and load the harvest on trucks. The seasonality of this need, however, creates a market gap:during planting and harvesting, there is often a shortage of drivers, yet during the off-season the drivers are in excess and unutilized.As a result, although farmers consistently identify a need for more tractors (currently the largest providers of tractors are state-owned "Mekanizatori" places and privately owned Farm Service Centers) and tractor drivers, it is unclear whether there is sufficient potential revenue to incentivize further business development.

In addition to fruits, vegetables and grains, Imereti is a leading region forlivestock farming. Approximately 18% of country's meat production comes from Imereti, a larger share than in any other region. The breakdown of this production is given below.

**Figure 7:Number of live animals and beehives by thousand heads. 2013 GeoStat data**

| Livestock | Imereti | Georgia | Imereti's National Share |
|---|---|---|---|
| **Cattle** | 209 | 1230 | 17% |
| **Pigs** | 31 | 191 | 16% |
| **Goats** | 8 | 61 | 13% |
| **Poultry** | 1215 | 6761 | 18% |
| **Beehives** | 14 | 399 | 4% |

As will be discussed below, this production highlights the importance of animal husbandry skills and veterinary care, both of which are currentlyat low levels. However, as with the skill provision for the agronomists, the bulk of the market is not looking to formally employ individuals full-time nor can it support private practices. Skills for the care of animals and to offer training on proper animal feeding and disease prevention in particular are crucial, but mostly likely will be demanded (and therefore provided) through informal channels.

Smallholding farmers generally visit veterinarians for the provision of government inoculations or when animals are sick; they usually do not view veterinarians as channels for informal training in animal husbandry.Farmers are sometimes prepared to pay a simple fee for this service (if they cannot get it from the government for free, in a timely fashion) but usually, they expect to be able to hire people for barter.This reality makes it difficult for veterinarians to make a living.

Probably the largest industry related to animals in Georgia is the dairy sector. Cattle are also the largest meat production group in Georgia, but their primary purpose is the production of milk, most of which is consumed in the form of cheese. Meat production is generally a secondary industry. Male calves are often immediately slaughtered or sold to cattle traders, who mostly export them to Azerbaijan. Cattle are fattened using summer pastures; some feed-lots exist.

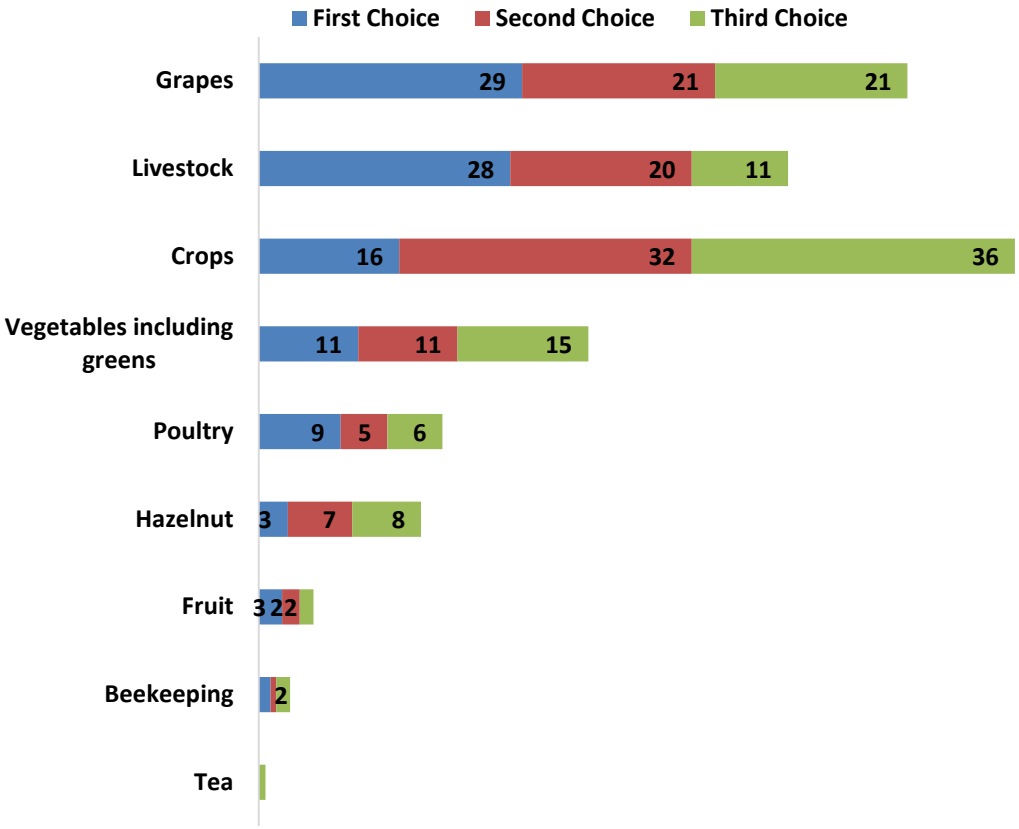
Given the importance of milk production, farmers need people skilled inmaintaining the health and productivity of the cattle, and milk processors need technicians for production of milk, cheese and other dairy product (e.g, food technicians and refrigeration specialists).In Imereti, however, most milk processors are relatively small and do not produce a widerange of cheese varieties, unlikemilk factories

in Samtskhe-Javakheti. As a result, milk processors in Imereti usually lackmodern machinery and are not looking for highlyskilled milk processing specialists. Rather, Imereti milk processors are seeking people that are familiar with the basic food safety and quality standards and that can help to deal with somewhat tightened government regulations.

## *Survey of the VET needs of individual small farmers*

To assess how theinformal VET is being shared and exchanged among the farmers in Imereti,we conducted a survey of 154 small farmers in 11 municipalities of Imereti (all except Kutaisi). Although the results should not be generalized to the entire farming population of Imereti, it provides a strong indicative picture of the VET situation in the villages of Imereti.Of particular interest was access to formal and informal veterinary services, as it was the most mentioned profession by businesses. We followed up with 28 farmers who indicated that they used private VET services in their own villages.

**Figure 8: Three most important agricultural products of a farmer in Imereti (%)**

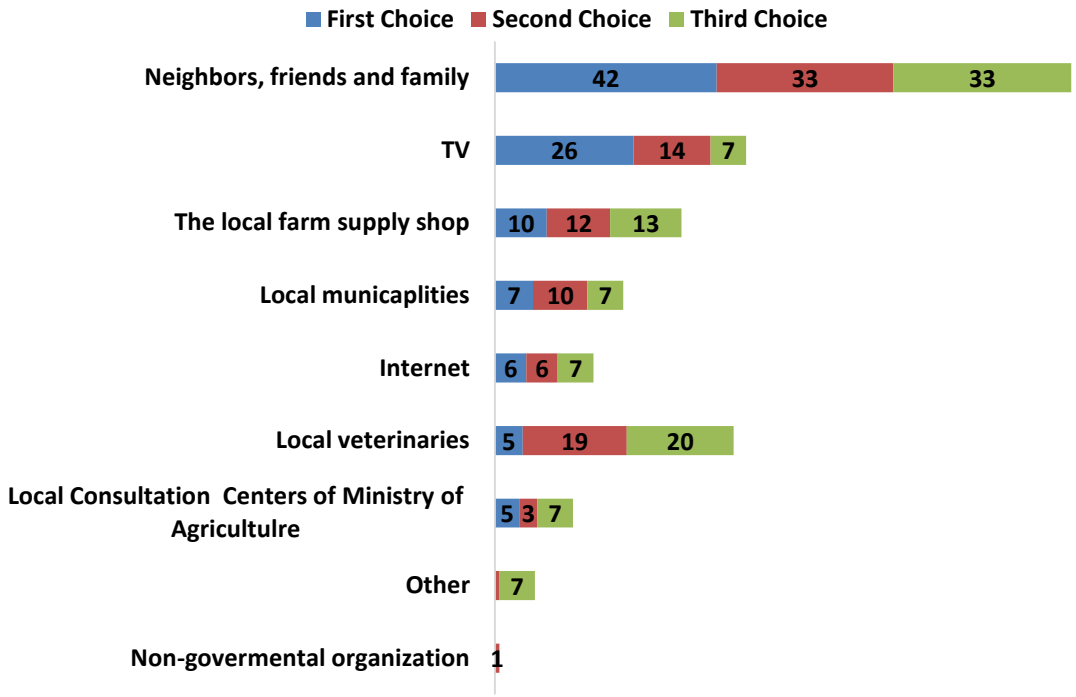


Survey results reflect the statistical profile of Imereti:grapes, livestock and grain arethe main agricultural products of farms.Of the grains, Imeretiis the largest maize producer in Georgia. Only 24% of our survey respondents, however, reported that maize was their primary agricultural activity, but significant numbers reported that it was second or third most important agricultural activity. Livestock was also popular, reflecting Imereti's profile as one of the largest cattle producers in Georgia. Our survey respondents had a few heads of cattle. We also asked the respondents to specify vegetables which in Imereti's case mostly mean cucumbers, tomatoes and coriander. From fruits, the most popular kinds are pear and apple.

## Means of receiving agricultural information

Of particular interest is from where farmers receive the needed agricultural information. This allowed us to highlight the key informal channels of agricultural information about crops and animals and the techniques of looking after them.

Figure 9: Sources of receiving agricultural information (%)



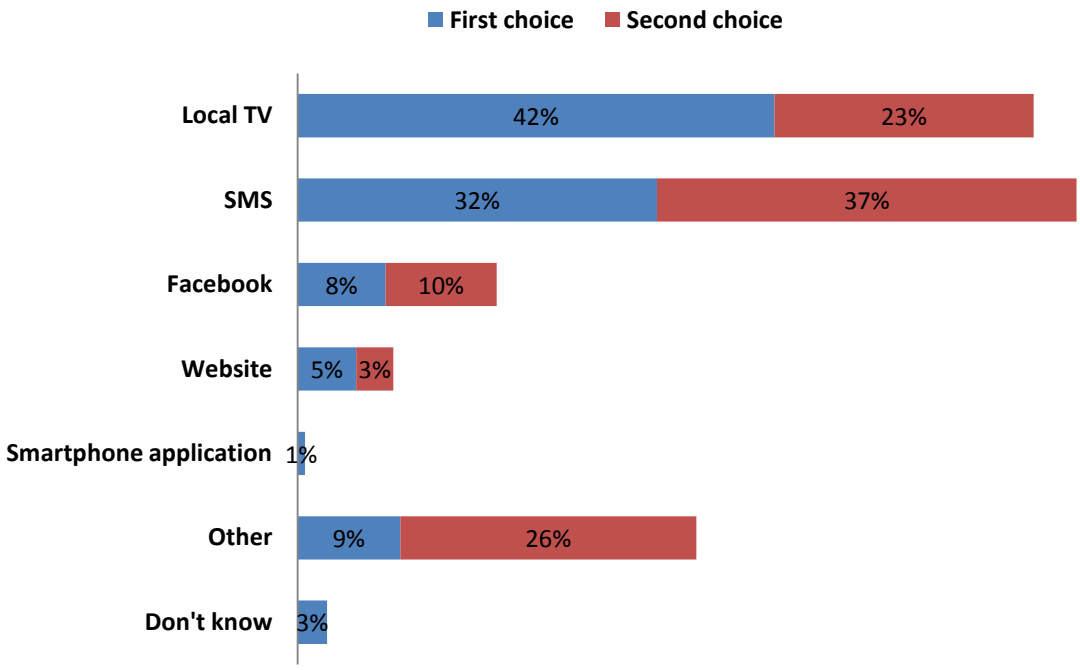

The graph demonstrates that most farmers receive information from people who they know well. This can be neighbors, friends, or relatives. The information might not come from a very qualified source, but it can be quickly obtained and follow-up questions can be easily asked. Many farmers also receive agricultural information from TV, but further exploration revealed that it was mostly from news programs, such as *Kurieri*, where people can learn about the major developments in the agricultural sector in the country. Information about the government's agricultural activities, such as free plowing program or cheap agricultural credits would primarily come from such news programs. Small numbers of farmers also watch specialized agricultural programs (respondents named "Farm" and "Agronomist") where they discuss various agricultural issues.

After neighbors and TV, the main source of information are the local agricultural input providers. Of course, this information will primarily concern the products that they sell: what crops are suitable for different geographic areas; what are the adequate pesticides and fertilizers; and, how a farmer should perform basic agricultural activities. However, it also suggests that there is a small local 'hub' for information provision which can be utilized by a project that is trying to enhance informational outreach. This channel of information and training has been used regularly by different development projects in the agricultural sector over the years. It has been particularly popular in the supply chain development projects, financed by the Swiss Agency for Development and Cooperation that have been carried out over quite a few years in Samtskhe-Javakheti, Shida Kartli and Kakheti.

While some farmers mention that local government is their primary source of information, in our detailed discussions we found that often farmers confuse local government with the Information and Consultation Centers of the Ministry of Agriculture (ICCs).Relatively newly established, ICCs often employ former local government employees and share the same building with the local government. So it is not surprising that many small farmers consider them as local government employees, although the local governments no longer have agricultural divisions.

In addition to asking about where they gain information, we also asked where farmers would like to receiveinformation.

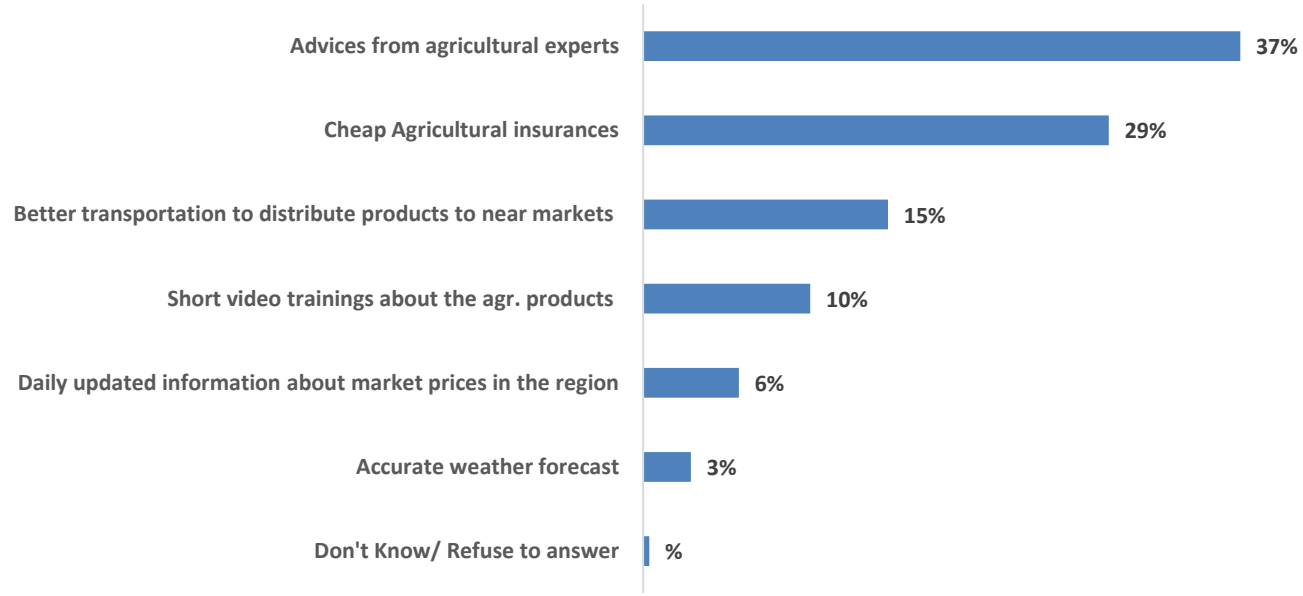
**Figure 10: What would be the most convenient source for you to receive agricultural information?**




In another question, we wanted to understand through which technologies farmers prefer to obtain agricultural information. This is important for activities of Mosavali, a partner of the TVET project. While TV is a popular means of receiving information, the survey also showed that SMS is also quite acceptable for large numbers of farmers (the top secondary means). Other popular medium for farmers ("other"), was brochures/leaflets and newspapers.

It is certainly recognized by farmers that they lack decent information.

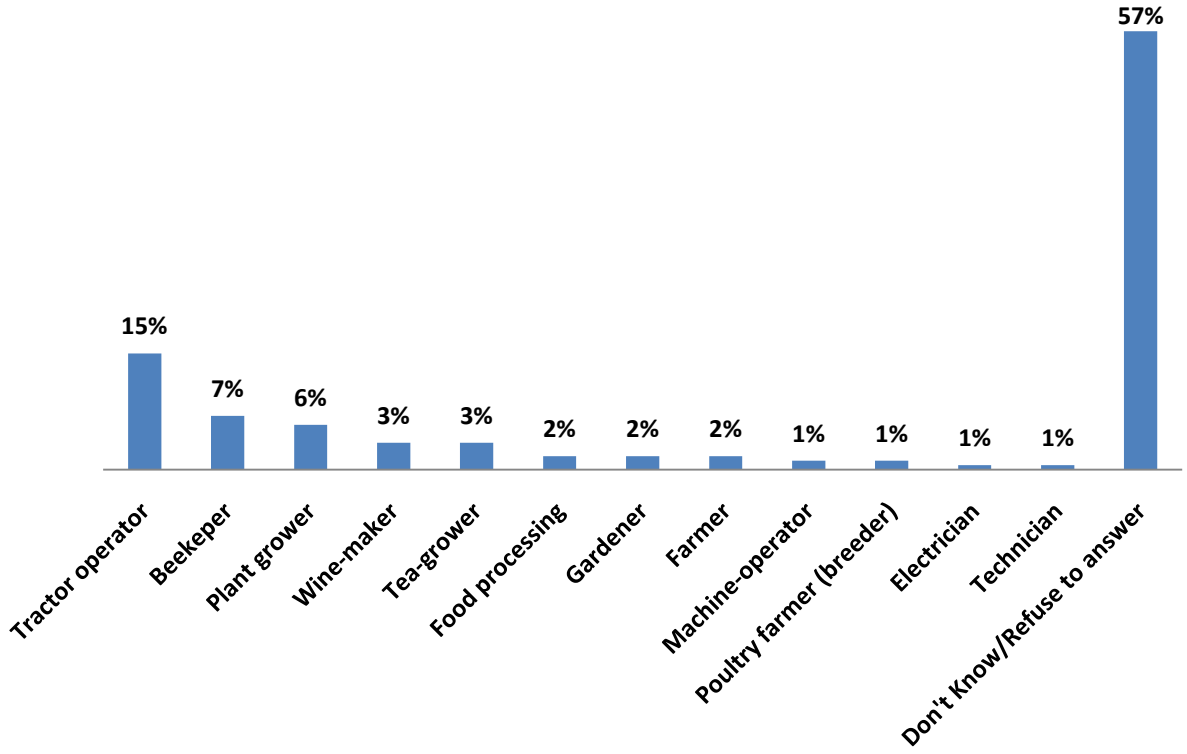
**Figure 11: What would be the most useful agricultural service?**




When askedto choosethe most useful agricultural services for them, advice from agricultural experts topped the list. In a different question, we asked if respondentsare aware of the services of an agronomist in their village or municipality; 84% of surveyed farmers indicated they did not know whether such service is available, whileonly 11% said that they do not require services of an agronomist.

We also asked people what specialists (other than veterinarians and general agronomists) they most needed to support their business. We excluded veterinarians and general agronomists, as the need for those was already fairly well demonstrated and we asked separate questions about veterinarians and agronomists.Most respondents (57%) could not identify another need; the only significant identified needs were tractor operator (15%) and beekeeping expert (7%).Farmers often complain about the land areas for grain crops that need to be ploughed and the difficulty of quickly finding an available tractor.

Figure 12: What agricultural specialists (other than agronomists and veterinary specialists) are most needed for your agricultural activities?




## Veterinary service provision in Imereti

Because of the near consensus about the lack of and the need for veterinary services, we decided to spend some time looking in detail at how the veterinary provision works in Imereti. Almost all farmers use veterinary services partly because the government provides periodic vaccinations for cattle and other animals. 47% ofthe respondents said that they use a veterinary specialist from their own village or nearby, and 42% said that they use the veterinary service from somewhere else in their municipality. To better understand how the provision ofthe veterinary serviceworks, GeoWel conducted follow upcalls to all24 respondents who had indicated that they used private veterinary services in their own village. We wanted to explore why they used private veterinary services rather than the state one, and how accessible the veterinary services are in the villages in general.

In addition to the state's periodic vaccinations initiatives, farmers may also need to use veterinary services when a cow is giving birthor is sick, or if farmers think their livestock need extra vaccination. In such cases, farmers are usually able to find someone in their village or nearby with some veterinary knowledge who can give them advice and provide help. Often, the private veterinarians are not paid in cash but rather traded in barter. For example, veterinarians might receive wine or other agricultural productsin exchange from a client.

In assessing veterinarians, most respondents agreed that the ones who work for the government tend to be better than the private ones.In general, however, there seem to be very few young veterinarians. Most of the existing veterinarians started their practice during the Soviet Union and still use old

methods, according to respondents. When a state veterinarian comes to a village, local veterinarians also usually come to provide assistance and receive some experience. This is a good example of informal learning.

## VET awareness and potential

We were also interested to assess the level of awareness and attitudes towards the VETs among thesmallholding farmers in Imereti. About 35% of the respondents said that at least one person in their household had a VET education, usually from the Soviet times. 32% of respondents were aware of current VET centers in Imereti; Iberia College and Didi Jikhaishi were identified most frequently.Respondents often did not realize that Akaki Tsereteli State University also offers VET programs.

18% of the respondents stated that at least one member of their households would be interested in studying in an agricultural VET program if it was accessible (both financially and geographically) and of a good quality. The three most desired professions for training were winemaker, beekeeper, and plant grower. Yet, more than half of the interested respondents indicatedthat they would prefer the VET courses to last few months. About half would attend full-time courses, while the other half would prefer part-time courses. Only a small percentagewould attend a VET course that lasts more than a year or only a few weeks.

## Connecting with small farmers

For formal VET providers, the primary challenge is that most of the sector is not interested in committing to long educational courses. However, this is certainly not universal.While some farmers are likely interested in working with informal VET providers, other farmers might be more interested to professionalize than others.

Smallholding farmers are a diverse group and some of them can reasonably be considered nascent farmers while others are better understood as individuals trying to enhance their lives with locallygrown food. Three main differences determine which of these two categories a farmer will fall into. First, households with other sources of cash income are the most likely to invest and attempt to expand their agricultural output.

There are three main sources of cash (excluding the sale of agricultural products) for rural households: salaried employment; remittances; andgovernment payments. As discussed previously, a minority of rural households have salaried employment, at a far lower rate than urban areas:official data shows only roughly 20% of people living in rural areas have salaried employment[18], while onlyone-third of rural households in Georgia report that their household has income from salaried employment, compared to more than 60% in urban areas.[19]

Apart from salaried employment, the other two major sources of cash flow for rural households are remittances and pensions. According to a large national household survey, roughly 12% of households report that they receive money from relatives living abroad, with the same number saying they receive

[18]GeoStat (reviewed 25 August 2015), Distribution of Population age of 15 and older by economic status in rural/urban areas

[19]Caucasus Barometer (2013), Income Source: Salary, CRRC (http://caucasusbarometer.org/en/cb2013ge/codebook/)

money from relatives inside the country.[20] However, the largest source of income for households in Georgia is the state pension. Roughly two-thirds of households in rural areas say that they receive pensions and government benefits.[21]

This information is important for our purposes, because varying sources of income make families vastly more financially secure. Agricultural production may create surpluses, but small-scale agriculture in Georgia is an unreliable business, with droughts and floods occurring every few years as well as endemic animal diseasesthat reduces output and create the risk of unexpected animal death. Families with non-agricultural sources of income are shown to be far more likely to develop their agricultural business than families in which agriculture is the only income source. The latter group is more likely to remain in a low-input, low-output model.

Apart from the income profile, two other factors are particularly important in determining the likely success of an agricultural business. First, the quality of land and nature of production. If farmers produce high-value products such as nuts, citrus fruits, grapes, honey or ham, they are more likely to demonstrate the potential for growth.

Second, interest is crucial. There has long been a prevalent perception in Georgian society that finding opportunity means going to the city. A research study that GeoWel conducted for World Vision involved holding focus groups in schools in a number of Georgian regions.[22] Almost none of the students who participated saw any prospects for those choosing to stay in rural areas. Fewer saw agriculture as a potential opportunity. Thus, in addition to the financial resources and the quality of land/nature of production, there is the simple question of whether members of the rural population actually want to be farmers.

These factors are important for our purposes because perceptions about the nature of farming help to determine the informational needs of the farmers in question. In particular, while agricultural VET is seen as a means of improving agriculture in the mass marketplace and, by extension, ameliorating the poverty faced by the farmers, it is not likely to be smallholding, subsistence farmers who benefit most from formal VET. For this reason we must pay particular attention to the logic of *informal* VET. While this is more difficult to tie to the VET system, it is undoubtedly where the greatest impact in poverty-reduction can be achieved.

Of course, these distinctions do not help one to identify the farmers who may have potential and interest in more extensive commercial involvement. However, these are clearly the issues that should be kept in mind when thinking about agricultural VET provision, as it highlights that albeit small group does existwho will directly be involved in VET.

One approach for identifying commercially-oriented farmers is to work through the cooperatives. Cooperatives can be a useful mechanism for connecting to smaller, but still commercially-oriented, farmers, for five reasons. First, it is easier to work through groups that bring together a collection of farmers, rather than approaching individuals. Second, associations are often specialized in one particular

[20]Caucasus Barometer (2013), Income Source: Relatives Living Abroad, CRRC and Income Source: Relatives Living in Georgia, CRRC (http://caucasusbarometer.org/en/cb2013ge/codebook/)
[21]Caucasus Barometer (2013), Income Source: Pensions and Government Benefits
[22] GeoWel study for World Vision (2015), Economic Opportunities for Youth in Kakheti, Samtskhe-Javakheti, and Imereti.

area, like beekeeping, hazelnut growing, etc., which makes it easier to match a group'srelevant interests to a particular course. Third, the farmers in cooperatives may have more resources,or by concentrating the resources of a number of farms in one organization, they may have a high enough concentration to justify developing skills that individually, farmers could not justify. Fourth, there is a list of cooperatives which, in principle makes them easier to identify and talk to. Finally, and perhaps most importantly, the fact that a group of farmers have formed a cooperative likely signals that they are taking the agricultural sector more seriously and have a clear desire to develop and grow their commercial production. For all of these reasons, we consider the cooperative sector and their likely VET need provision below.

## *VET needs of cooperatives*

### Background information

To develop a full picture of employers' awareness and perceptions about the VET sector, in addition to the small farmers' survey we also performed in-depth interviews with 17 agricultural cooperatives (15%) out of 114 in Imereti. Agricultural cooperatives are relatively new – most of them have been formed within the past year.We interviewed a good cross-section of cooperatives – from various agricultural sectors and in all municipalities in Imereti (except urban Kutaisi). This was enough to obtain quite detailed understanding of how cooperatives operate in Imereti and what their challenges are in finding employees with necessary skills and qualifications. The table below provides the detailed information about the interviewed cooperatives:

**Figure 13: The list of interviewed cooperatives in Imereti**

| # | Cooperative | Rayon | Agricultural activity | Partnership with VET colleges |
|---|---|---|---|---|
| **1** | Sairme's Natural Honey | Baghdati | Beekeeping | No |
| **2** | Kvatsikhe 2015 | Chiatura | Fishery | No |
| **3** | Tsiakhvi | Samtredia | Corn | No |
| **4** | Tavtavi | Sachkhere | Corn | No |
| **5** | Bochola | Chiatura | Dairy | No |
| **6** | Nektari 15 | Chiatura | Beekeeping | No |
| **7** | Nike | Khoni | Corn | No |
| **8** | Matkhoji | Khoni | Livestock, greenhouses, crop | No |
| **9** | Tskhaloba | Baghdati | Beekeeping | No |
| **10** | Mamuli 1 | Samtredia | Greenhouse | No |
| **11** | Ilori | Samtredia | Poultry | Yes |
| **12** | Bumerangi 777 | Vani | Hazelnut | No |
| **13** | Nanantri | Vani | Beekeeping | No |
| **14** | Eco-migrant | Khoni | Tea | No |
| **15** | Chiri | Vani | Fruit processing | No |
| **16** | Imedi | Samtredia | Greenhouses | No |
| **17** | Lelo | Samtredia | Dairy | Yes |

In total, there are 114 cooperatives in Imereti. Cooperatives benefit from the international donor projects on the one hand, and from governmental assistance on the other. For example, PiN is helping 10 cooperatives across the region to develop their capacities. At the same time, the government established the Agency for Development of Agricultural Cooperatives (ADAC) in 2013 which provides

assistance in the form of trainings and technical equipment to the established cooperatives. Often, however, cooperatives do not seem to operate as institutionalized entities. Rather, individual farmers combine to apply for grants or other kinds of assistance.

Among the registered cooperatives in Imereti the most popularproducts aregrains, vegetables and fruits, including greenhouses,. Also, beekeeping and livestock activities seem quite popular.

Figure 14: The list of sectors with the highest concentration of agricultural cooperatives in Imereti

| Activity | Number | Percentage |
|---|---|---|
| **Crops and plants, including greenhouses** | 41 | 36% |
| **Beekeeping** | 30 | 26% |
| **Livestock** | 18 | 16% |
| **Poultry** | 5 | 4% |
| **Wine** | 4 | 4% |
| **Dairy** | 4 | 4% |
| **Hazelnut** | 3 | 3% |
| **Service** | 3 | 3% |
| **Tea** | 1 | 1% |
| **Food Processing** | 1 | 1% |
| **Fish** | 1 | 1% |
| **Not specified** | 3 | 3% |

As to the municipalities, Vani has the most registered cooperatives (27 cases), Khoni and Samtredia are also quite active in terms of registration of cooperatives (16 and 15 cases respectively).

Figure 15: Imereti municipalities by the number of agricultural cooperatives

| Municipality | Number | Percentage |
|---|---|---|
| **Vani** | 27 | 24% |
| **Khoni** | 16 | 14% |
| **Samtredia** | 15 | 13% |
| **Baghdati** | 12 | 11% |
| **Sachkhere** | 12 | 11% |
| **Tskhaltubo** | 10 | 9% |
| **Chiatura** | 9 | 8% |
| **Tkhibuli** | 8 | 7% |
| **Terjola** | 4 | 4% |
| **Kharagauli** | 1 | 1% |

A simple quantification of the cooperatives, however, may not be the most useful exercise, as some of the cooperatives are more useful partners than others. Most of the respondents registered cooperatives in 2015; there were only few cases when cooperatives had been registered earlier.Thisphenomenon is likely due to the recent launch of government'sADAC, which promotes and assists in setting up cooperative across Georgia.

## Rationale for forming cooperatives

Most respondents highlighted the funding opportunities as the most important reason to registerthe cooperatives, particularly the government fundingand matching contribution opportunities.

> *"As soon as I heard about the government initiative on cooperatives, I decided to spread the information in my village, asked people to join and created one. If I want to manage to get the full funding, at least I will get the benefit by the matching contribution program." Chiatura, dairy.*

> *"For example, we have paid only 35 GEL [per hive] for purchasing 60 beehives, when the actual price is GEL 110." Baghdati, beekeeping*

All involved farmers wanted to develop their businesses and needed additional funding sources, heard about the new government initiative concerning the cooperatives and decided to gather enough people necessary forforming one. Respondents are less informed about the funding opportunities from the international organizations, but some of themwere beneficiaries of PIN's ENPARD project. We also came across Mercy Corps beneficiaries.

One of the often mentioned challenges during working as a cooperative is navigating relationships with other cooperative members. Respondents highlighted the necessity to regulate involvement of all the cooperative members, as often respondents reported that are only 2-3 actively engaged members, who are doing everything, while others are just members.

> *"We were 11 members when we registered as a cooperative, can you imagine, yet, one year since we started to cooperate, and only I and another member of our cooperative are doing everything, including moving the beehives, purchasing medicines, or finding the clients to sell the products to." Vani, beekeeping*

Almost all of the respondents highlighted the importance of cooperatives as the way to develop the agriculture. They stated the European example which indicates that cooperatives are quite helpful.

## Employment and the skill needs in cooperatives

### Employment and learning opportunities

Majority of the respondents don't have any strategy to recruit employees, but there are a few observations about their current approach:

- Neighbors and people in the surrounding village is one source of employees,
- Cooperatives also try to findsuitable candidates among relatives or friends,
- Word-of-mouth is the only way theyspread the information ,
- It is hard for them to identify skills which are required for the employees, considering that usually all the people living in the villages have the skills which are required to work in the agriculture field.

> *"I cannot imagine that there are women living in my village and don't know how to milk the cow." Chiatura, dairy*

Some of the respondents have attended trainings organized mostly by Elkana or the Ministry of Agriculture. Allwho haveattended at least one training found it interesting and useful. The majority noted they will need to attend the trainings about sales management and distribution. Other respondents highlighted that they would like to have the opportunity to attend trainings to increase theoretical knowledge related to their activity.

*"I would particularly like to have the information about technologies to prepare feed, as well as how to prepare the food concentrates.Unfortunately, there is no one in Georgia who knows it, there is only one company which prepares manually." Samtredia, poultry*

**Needed agricultural professions**

All the respondents from the livestock sub-sector indicated to the need for qualified veterinary specialists, noting thatgovernment services are not sufficient and it is hard to find competent veterinarians with up-to-date knowledge in the villages. The cooperatives particularly need the veterinarians toanticipate potentialdiseases, especially the new ones. The lack of specialized veterinarians is also a problem, ashighlighted by a poultry cooperative:

> *"We only ask advice from colleagues who have workedin the poultry business for more than 25 years are very qualified. When we need the serious consultations, we are going to Tbilisi. Even for buying the medicines, we don't trust other companies, especially in Kutaisi, or in Samtredia." Samtredia, poultry*

Like small farmers, cooperatives also need agronomists. A respondent from the tea sector highlighted that all local agronomists are very old, and have no information about the new trends and do not have knowledge of modern technologies.All of them are using literature and approaches form the Soviet period.

> *"If you ask if there are available agronomists, there are a lot, but the question is if they are qualified or not. I can say that mostly they are not qualified. Usually all the people who are working in the agricultural fields, or have the greenhouses, are saying that they are agronomist, without any qualifications. This is very bad trend and needs to be changed." Samtredia, greenhouse*

Cooperatives also seem to demand tractors and tractor operators. The problem is usually with their availability.

*"In Khoni, there are only few tractors,and people need to wait until tractors will be free for them. That means that sometimes the agricultural circle can be missed." Khoni, livestock*

## VET sector awareness and attitudes among cooperatives

In general, very few cooperative members are aware of the VET centers in Imereti, but those from Samtrediawere able to recall Didi Jikhaishi VET center and those from Baghdati knew of Iberia College. Nevertheless, the majority of the respondents considers the VET education as an important part of developing the agriculture in the region.But at the same time almost all of those who had heard of the VET centers of Imereti doubt about the quality of education.

Almost all of the respondents who were knowledgeable about the VET centers of Imereti believe that practical component is missing during the studies, especially on agricultural programs.

> *"I am not sure if the graduated students will manage to work independently, because they lack the practical training. But anyway it is very good if they will have some very basic background information." Khoni, livestock*

> *"I am not sure, that currently students studying at these colleges will be able to get good education, but at least they will have some basic information. And you know, it is always better to know something than nothing." Samtredia, poultry*

> *"We can hire the VET graduates, but I can imagine that they can only be assistants." Baghdati, beekeeping*

In spite of the lack of awareness and trust, almost all of the respondents said they would cooperate with VET centers.Yet, many of them stated that their cooperatives are not large enough or sufficiently developed, and the students will not have the possibility to get enough practical experience. Interestingly, one respondent noted that if they start a partnership with the VET colleges, it could possibly give them additional workforce.

> *"Why not, at least the student will be here and they can help. There are lot of things to do when you are working with the bees."Baghdati, beekeeping*

One respondent from a poultry cooperativehad been approached by Didi Jikhaishi Collegewith an offer to start a partnership. Did Jikhaishi said they would receive new students to train in poultry and it was important that students receive practical experience. Yet, Didi Jikhaishi never contacted him afterwards. The respondent assumed that the poultry course did not start, adding: "I am not surprised, I am sure the interest level among students will be very low, and that's why there weren't able to open this course." Currently, this respondent cooperates with Tbilisi Agrarian University and Shota Rustaveli University, and has been receiving students from them. Usually, students come once a month, stay all the day, watch their work, help,and then return back to Tbilisi.

## *VET needs of large agricultural businesses*

To get a sense of commercial farming, we have used the databases of registered and active businesses provided by GeoStat as well as information provided by the Information and Consultation Centers (ICC) in Imereti, which we supplemented with data from various non-governmental projects.In total, we compiled a list of 335 agricultural businesses in Imereti, from which we selected businesses to interview. Using GeoStat's definition, four businesses are categorized as large, 23 are considered medium-size businesses, and 151 are small.[23] The remaining 157 businesses did not specify the size.[24]The list that we were provided had the following breakdown by activity:

[23]GeoStat classified a company as large if it has more than 100 employees and over 500,000 GEL turnover, medium size companies have 20 to 100 employees and 100,000 to 500,000 GEL turnover.Small companies have fewer than 20 employees or less than 100,000 GEL turnover.

[24] We will provide this database to the partner educational institutions and one of the key elements of their outreach strategy will almost certainly be a procedure for maintaining this list.

Figure 16: Breakdown of agricultural businesses in Imereti (aggregated database compiled from the data from GeoStat, ICCs and additional data).

| Agricultural sector | Number of agribusiness | Share in total number of agribusinesses |
|---|---|---|
| Livestock | 108 | 32% |
| Crops and plants, including greenhouses | 80 | 24% |
| Food processors, including beverages | 47 | 14% |
| Agricultural services, including mechanization and logistics | 43 | 13% |
| Mixed farms, including food processors | 28 | 8% |
| Fish farms | 17 | 5% |
| Forestry and related services | 8 | 2% |
| Unspecified | 4 | 1% |

Three out of the four large businesses are greenhouses (crops and plants), with the other performing hazelnut processing. Geographically, three-fourths of all agricultural businesses in Imereti are located in rural areas. This is logical as most agricultural businesses require land such as crop fields, greenhouses, livestock farms, fish basins, forestry farms and mixed-type farms. Businesses that are located in urban areas provide services such as consultation, agricultural inputs, mechanization/equipment service and food processing.

The most common agricultural activity in Imereti is livestock farming, mostly cattle and poultry,as well as crops and plants (including greenhouses). However, Imereti is known for having small agricultural plots, making conditions difficult for farmers to build large agricultural businesses.

**Profession and skill needs assessment in formal agriculture**

We conducted in-depth interviews with 40 relatively large agricultural businesses in Imereti in December, 2015 in order to identify their engagement practices with the VET sector. In February 2016, we called back to them to conduct a survey about demanded agricultural professions and the relevant skillsets. In total, we received responses from 34 (87%) agricultural businesses.

Figure 17: Sectorial breakdown of 34 agricultural businesses who agreed to a skills-mapping survey

| Agricultural sector | N of businesses interviewed | N of business who had hired VET students | N of businesses who had not hired VET students but had interns |
|---|---|---|---|
| Livestock and fish | 12 | - | 1 |
| Food processing | 7 | 2 | 1 |
| Plants and crops, including greenhouses | 7 | 1 | 1 |
| Agricultural service, including mechanization and logistics | 4 | 2 | 2 |
| Livestock and fish & FSC | 2 | 1 | 1 |
| Mixed farming including food processing | 2 | - | 2 |
| **Total** | **34** | **6** | **8** |

Six businesses (18%) out of 34 had hired a VET student. One business had two different jobs for the VET students. In addition, there were eight businesses that had hired “interns” for work placements, but not from the VET centers;these were essentially new employees who were on probation and a low initial salary during which time the employer decided if they wanted to take someone on as permanent staff.

We asked respondents to list the professions that were in the highest demand (the breakdown and details of these professions are provided later in this section). We also explored which specific skills these companies valued the most and whetherthe entry-level employees usually have these skills. This skills-mapping exercise consisted of two key components:

1) assessment of skills that are relevant to all professions (universal skills),
2) profession-specific skills.

## Demand for skilled agricultural professions in Imereti

In our in-depth interviews with 40 agricultural businesses, we asked them to list the professions that they needed the most. This concerns both the quantity (the number of professionals) as well as the quality (qualifications of professionals).The table below offers the distribution of these professions, along with thetype of agricultural businesses that listed them.

Figure 18: Imereti agricultural private sector survey: demanded professions

| Profession | N of answers | Type of business |
|---|---|---|
| Agronomist | 10 | Farm Service Centers<br>Food processing plants[25] |
| Veterinary service specialist | 7 | Livestock and poultry farms |
| Food processor ("food technologist") | 6 | Food processing plants |
| Modern technology and equipment expert | 5 | Food processing plants<br>Farm Service Centers<br>Fish farms<br>Greenhouses |
| National and international food safety standards specialist | 4 | Mixed farming including food processing plants<br>Farm Service Centers<br>Collection and distribution centers |
| Production safety specialist[26] | 4 | Food processing plants<br>Greenhouses<br>Collection and distribution centers<br>Wineries |
| Animal keeper ("zoo technician") | 3 | Livestock and poultry farms |
| Tractor operator | 3 | Crop farms<br>Mechanization services |
| Sanitary and international quality standards specialist | 3 | Food processing plants<br>Wineries |
| Marketing and sales manager | 3 | Food processing plants<br>Agro-logistics companies |
| Refrigeration technician | 3 | Food processing plants<br>Refrigeration businesses (greenhouses)<br>Collection and distribution centers |
| Electrician | 3 | Livestock and poultry farms<br>Food processing plants |
| Beekeeper | 2 | Beekeeping enterprise<br>Farm Service Centers |
| Fish breeder | 2 | Fisheries |
| Lathe operator | 2 | Agricultural equipment manufacture and service centers;<br>Fruit processing plants |
| Winemaker | 1 | Wineries |
| Welder | 1 | Agricultural equipment manufacture and service centers |
| Constructor | 1 | Agricultural equipment manufacture and service centers |
| Farmer / farm manager | 1 | Livestock and poultry farms |
| Agro-logistics operator | 1 | Agro-logistics companies |

[25] Includes cereals (wheat, maize) hazelnut, fruit, milk and meat processing plants and canneries.

[26] "Laboratorian", "chemistry expert" or "production quality assurance manager" as named by the business sector interviewees have been unified under "production safety specialist" as this is a profession for which national standard exists.

From the list, only agronomist is a specialty which is taught at universities;all other professions can be matched with the established VET professions for which professional standards have been developed in Georgia.Agronomists need to understand the nature and qualities of soil; varieties of different plants and the ways of looking after them. This profession is taught by universities, but not by VET institutions. In Imereti, the agrarian faculty of the Akaki Tsereteli State University (ATSU) offers bachelor's programs in agronomy, agro-engineering, and technology and expertise of agricultural inputs of food products.[27] None of these programs focus on animals and veterinary issues.In comparison with the listed professions, unskilled workers such as fish feeders, truck loaders, herb pickers, nut crackers and labor workers compose the largest share of the labor force of the agricultural private sector in Imereti.

As demonstrated by the the table above, the demanded professions largely dependon the type of business.Agronomist is the most demanded profession, largely because there are 14 Farm Service Centers in Imereti.Farm Service Centers provide agricultural consultations and inputs for local farmers, and qualified agronomists are often needed; they also tend to have high levels of employment and turnover. There are also additional 29 agricultural service providers in Imereti which employ (or are looking to employ) agronomists.

Veterinarians are needed at 108 livestock and poultry farms of different sizes in Imereti. The VET institution that prepares veterinarians is located in Didi Jikhaishi, Samtredia. Samtredia is the westernmost municipality of Imereti; currently, its VET graduates can hardly satisfy the labor market needs of animal farms that are located far from Samtredia.

Food processing plants need food processing specialists, as well as a range of other specialists, including modern technology and equipment expert; national and international food safety standards specialist; production safety specialist; sanitary and international quality standards specialist; marketing and sales manager; refrigeration technician; and electrician.

Greenhouses are one of the fastest growing sector in Imereti, with most of the herbs and vegetables exported to Russia and Ukraine. Their primary needed profession, however is not a plant grower (which does require a specific skillset that VET institutions can provide), but rather a herb-picker. A herb-pickerdoes not require particular training or certification, and it can be easily learned onsite, according to the greenhouse business owners we interviewed. However, greenhouses also require refrigeration technicians (though to a much lesser extent that herb-pickers), as the herbs are stored in the refrigerators before being distributed. Refrigeration technician programs are offered by VET institutions in Imereti.

## Assessment of universal skills by agricultural businesses

We received 46 completed questionnaires from 34 agricultural businesses regarding the skills they are seeking in their employees – both universal and profession-specific skills.The survey assessed eight skill categories – six under universal skills, two for profession-specific skills.To assess the profession-specific skills demanded for the 14 agricultural professions identified corresponding with the established VET professions, 34 businesses were asked to complete one survey per profession they employed.

[27] National Assessment and Examination Center, *National Entrance Exams 2016: Directory for Prospective Student*, pp99-100. http://www.naec.ge/images/doc/EXAMS/cnobari-2016-web.pdf (Reviewed February 19, 2016)
Akaki Tsereteli State University (2015), *Akaki Tsereteli State University Educatonal Programs Catalogue*. http://doc.atsu.edu.ge/geo/gancxadebebi/ATSU_Catalogue.pdf (Reviewed February 19, 2016)

Figure 19: The list of universal and profession-specific skills that agricultural businesses were asked to assess

| | Personal characteristics | Skill group |
|---|---|---|
| **1** | Working skills | **Universal skills** |
| **2** | Background | |
| **3** | Language skills | |
| **4** | General professional knowledge | |
| **5** | Managerial knowledge and skills | |
| **6** | Professional knowledge | **Profession-specific skills** |
| **7** | Professional skills | |

While the skills explored varied for profession-specific skills, we asked all businesses to assess the importance of 37 skills and characteristics, such as social skills or knowledge of English, for the six universal skills categories. We used some of the skills and characteristics from the professional standards, but also added more skills that could be important for businesses. For instance, while physical stamina is indicated as a prerequisite in some of the professions, punctuality is not;however,we included both in all questionnaires. This methodology is based on our experience of surveying the tourism sector in2012 for GIZ.

The intention of the skill mapping is to assess what skills are needed and whether those provided through VET match up. Therefore, in addition to this structured skillsmapping based on professional standards, we also asked the businesses an open question to list the top three to five skills that they consider essential for entry-level employees. We also asked them about whether they had hired anyone from VET and/or they have hosted interns or trainees, and if so,to what extent they possessed the skills that were essential or useful to the enterprise.

Figure 20: Skills mapping: number of filled questionnaires per profession

| # | Profession | N of filled questionnaires |
|---|---|---|
| 1 | Animal keeper - veterinary service specialist | 9 |
| 2 | Food processing specialist | 6 |
| 3 | Plant grower | 6 |
| 4 | Beekeeper | 4 |
| 5 | Agro-logistics operator | 3 |
| 6 | Farmer | 3 |
| 7 | Fish farmer | 3 |
| 8 | Refrigeration technician | 3 |
| 9 | Agro-equipment electrician | 2 |
| 10 | Milk processor | 2 |
| 11 | Tractor operator | 2 |
| 12 | Fruit & vegetable processor | 1 |
| 13 | Mechanical engineering technician | 1 |
| 14 | Viticulturist | 1 |
| **Total** | | **46** |

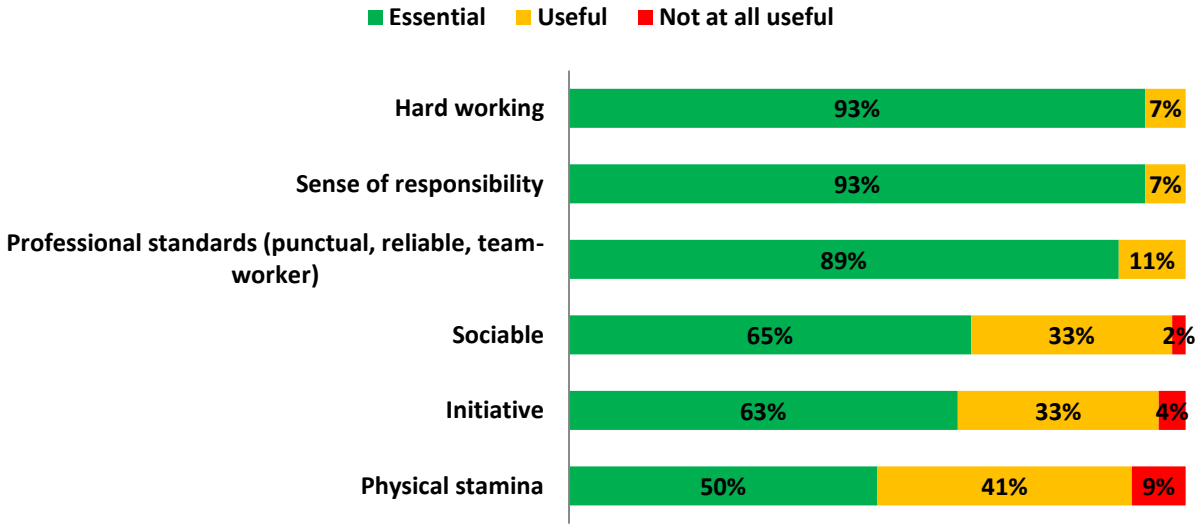
**Personal characteristics**[28]

The first set of characteristics we asked about might be considered characteristics of a person, but could also be described as a combination of personal attitude and "soft skills." Specifically, we asked how important it was that the employees in a given profession were:

- Motivated
- Positive in their attitude
- Sociable
- In possession of good general professional standards.

Professional standards (we explained to respondents) meant punctuality, being hard-working, being polite and paying attention to detail.

Figure 21: Assessment of the importance of personal characteristics of employees




As the above graphic shows,hardwork, sense of responsibility and adherence to professional standards clearly stood out as the most important personal characteristics in nearly all agricultural professions; physical stamina is more valued in labor-intensive professions.

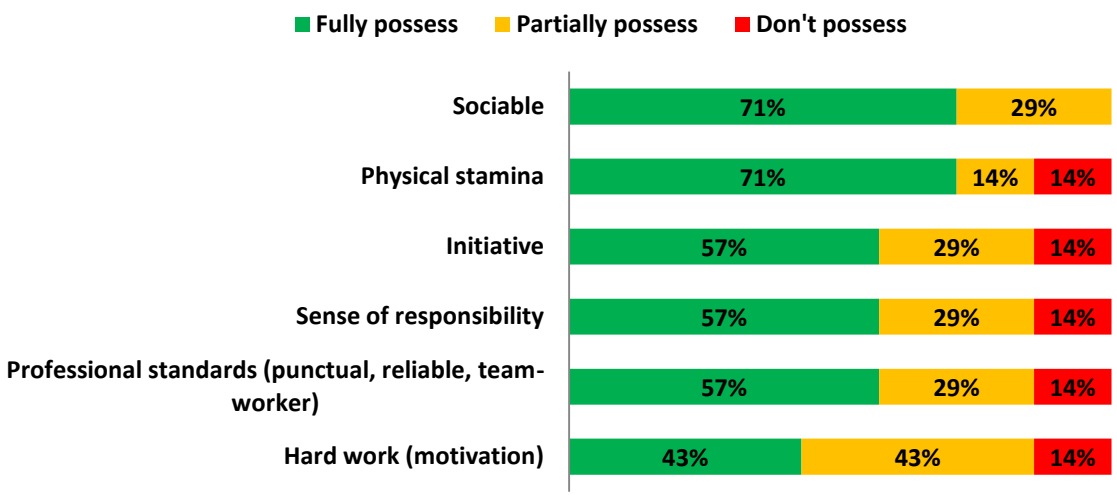
We also asked businessesan open-ended question regarding what are the most important skills in their assessment. The fact that the question did not have pre-coded answers was intended to allow them to suggest skills that we might have missed and to offer insights on different skill groups generally. This question revealed that businesses consider personal characteristics to be more valuable than professional experience. As with the structured questionnaires, businesses would name "hard working" and "sense of responsibility" most often. In explaining what exactly this sense of responsibility meant, businesses stressed"knowing that slightest negligence could be reflected on the quality of the final product"[29] or "realizing that sales revenue depends on what and how we behave."[30]

[28] Definitions of Personal Characteristics and other universal skills are taken from GoWel's 2012 survey on tourism in Adjara, conducted for GIZ

[29] Interview with a director of a hazelnut factory in Vani (December 11, 2015)

[30] Interview with a poultry farm owner in Terjola (December 17, 2015)

Figure 22: Do the VET students possess the necessary personal characteristics?




We asked businesses who had employedthe VET students to assess the qualities these entry-level employees possessed.“Partly possess” means that VET students “have potential to learn” as businesses explained it. The graph shows that there is quite a bit of mismatch of what businesses consider as essential and what they see in the entry-level VET-educated employees. For example, while “hard working” is the most important personal characteristic for businesses, they view VET students as possessing that characteristicless than any other personal characteristics from the list.

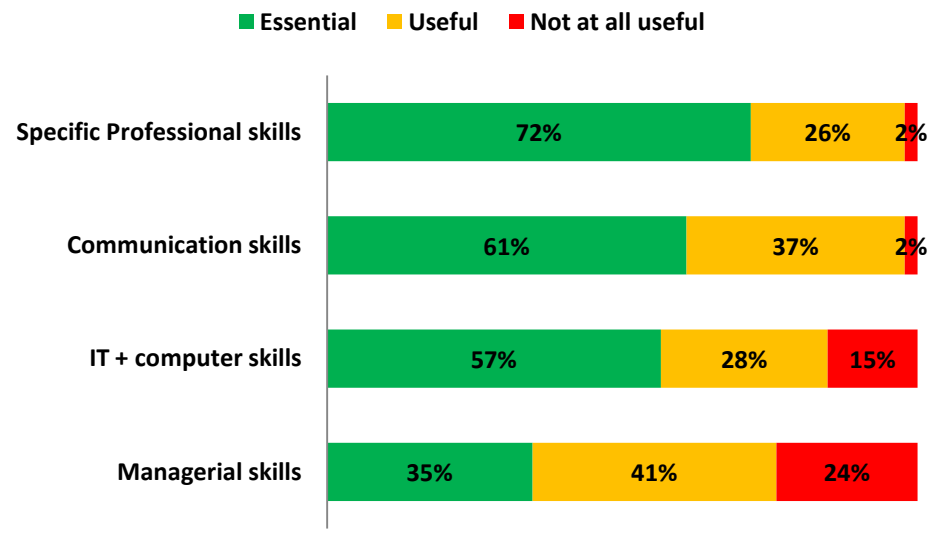
**General work-skills**

We asked about a number of general work-skills:

- IT/computer skills
- Managerial skills
- Communication skills
- Specific professional skills

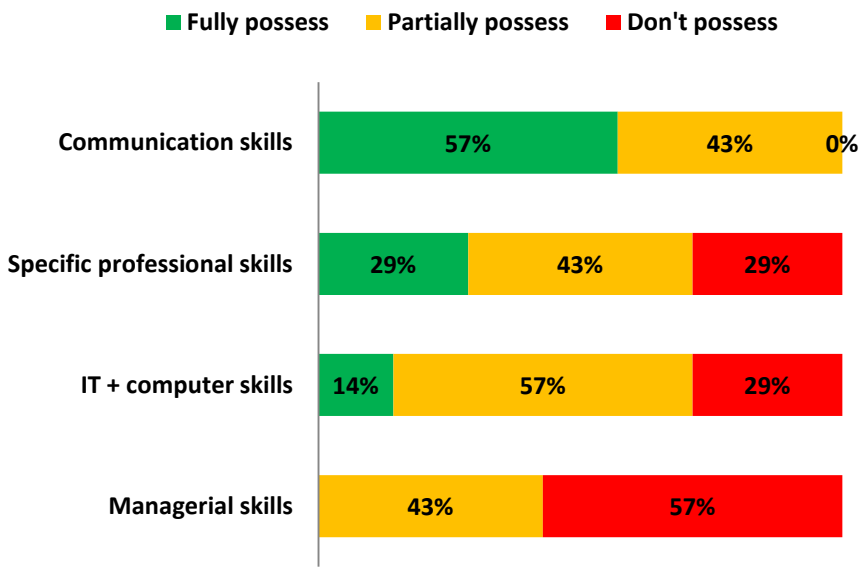
The general category of “specific professional skills” was intended to highlight the relative importance of training for the particular job - for example, the importance for a food specialist to know the safety standards and regulations. We later asked about profession-specific skills in far more detail.

Figure 23: Assessment of the importance of general work-skills of employees




Managerial skills were considered the least important across agricultural professions. Businesses instead view itmore essential that employees be knowledgeable abouttheir respective professions.

Figure 24: Do the VET students possess the necessary general work-skills?



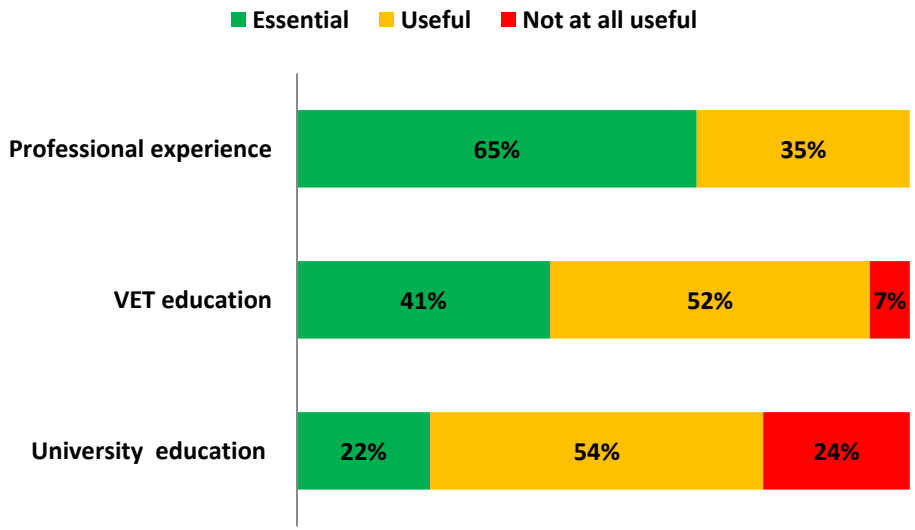

Businesses assessed VET educated employees as having quite low levels ofgeneral work skills, with the exception ofcommunication skills.

### Background knowledge and experience

We asked the businesses what background, educational or professional, was considered as essential for an entry-level employee:

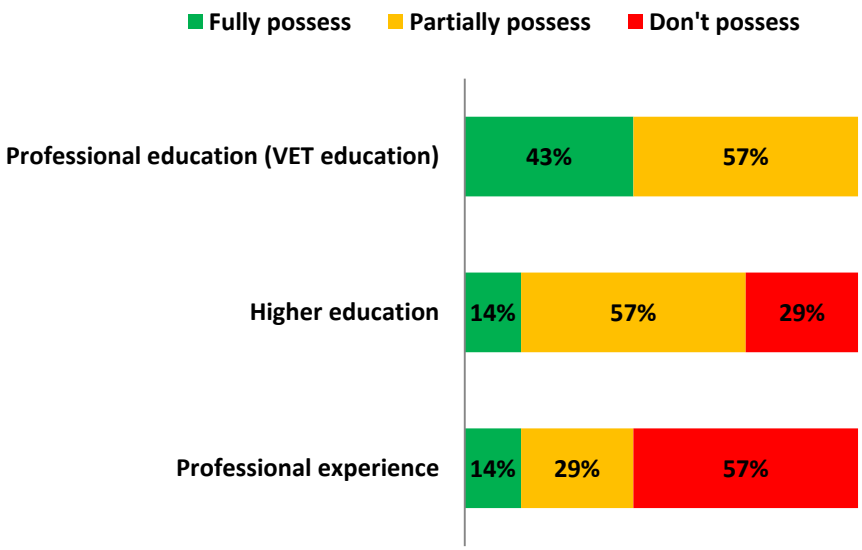
- Higher education (University undergraduate degree)
- VET education, or
- Professional experience

Figure 25: Assessment of the importance of background education and experience of employees




In general, agricultural businesses value professional experience far more than university education andover the VET education as well. More than that, our researchers believethat the reportedsignificance of VET education might be overstated, because the interviewees knew that this was the focus of the survey and they may have been telling the interviewer what they wanted to hear. In general questions,the importance of the VET education was given significantly less value:in an open-ended question requesting alist oftop desired skills or characteristics for entry level employees, only two out of 34 businesses (5%) listed VET education.

Figure 26: Do the VET students possess the necessary background education and experience?

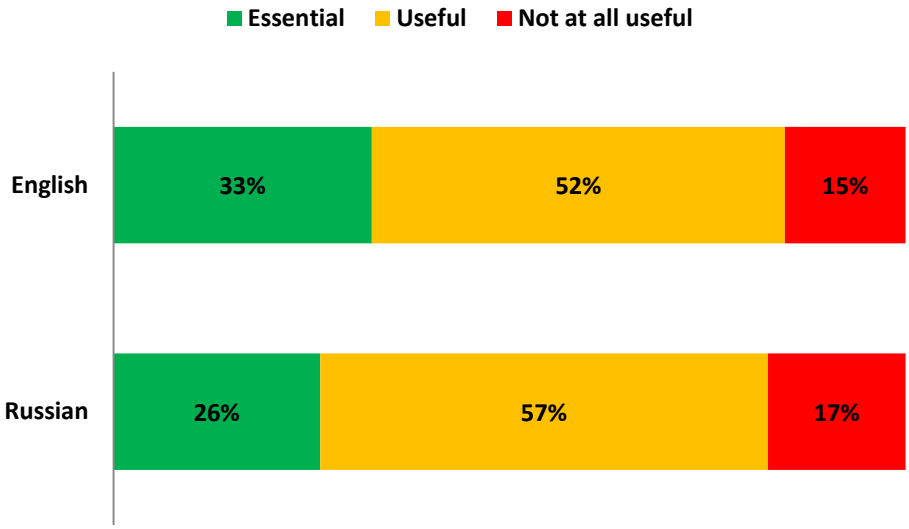



Curiously, only 43% of businesses think that the VET students fully possess the needed VET education, while 57% of businesses consider that the VET students only partly possess necessary VET education. This reflects the perception of businesses that the VET education does not always fully correspond to the needs of a particular business.

### Language skills

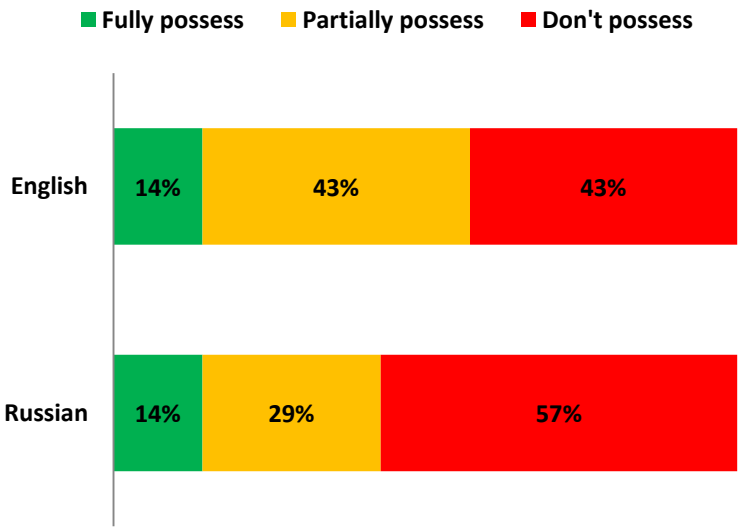
We asked agricultural businesses to assess the importance of the two most popular foreign languages in Georgia: English and Russian, as well as "any other language."Only one business mentioned German, and it was not considered as essential, so it was not included in our analysis.

Figure 27: Assessment of the importance of language skills of the employees



While language skills are not considered as essential, knowing English is still viewed as advantageous. Given that the above question was part of a structured questionnaire that reviewed 37 skills, 33% is quite a low share.During in-depth interviews, languages were also not considered important.From a supply perspective, knowledge of English and Russian languages is very low among the entry-level employees in Imereti's agro-sector.

Figure 28: Do the VET students possess the necessary language skills?

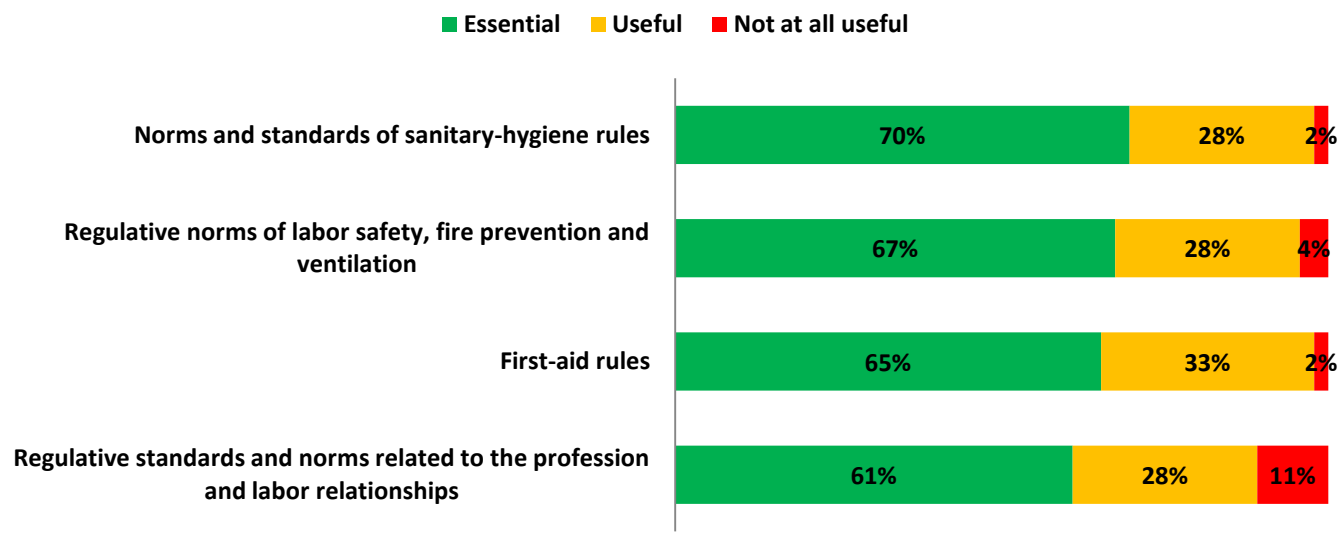



**General professional knowledge**

For general professional knowledge, we asked businesses the following questions:

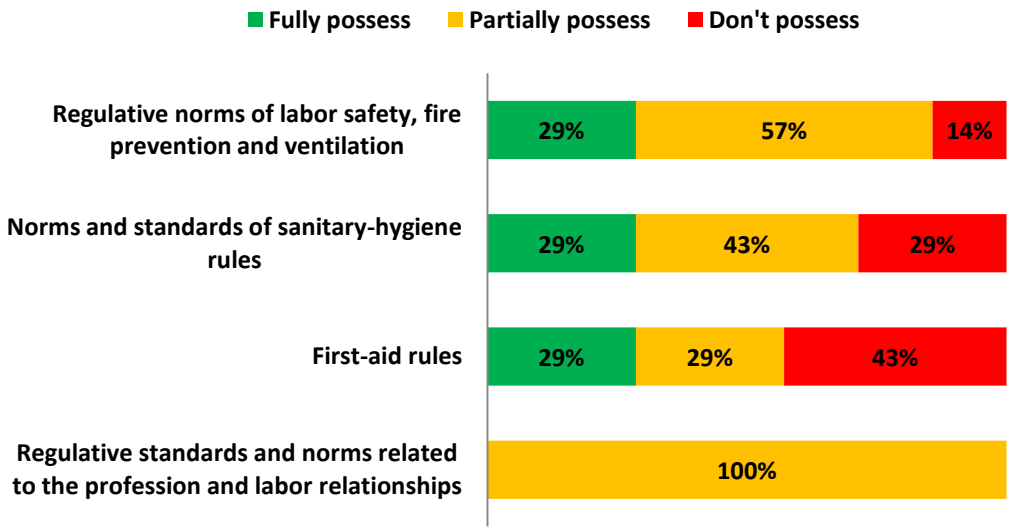
- Norms and standards of sanitary-hygiene rules
- Regulatory norms of labor safety, fire prevention and ventilation
- First-aid rules
- Regulatory standards and norms related to the profession and labor relationships

Figure 29:Assessment of the importance of general professional knowledge of employees




All general professional knowledge skills are considered essential by most agricultural businesses, but knowledge and practice of sanitary-hygiene rules are especially prized.

Figure 30: Do the entry level employees (VET students and interns) possess the necessary general professional knowledge?

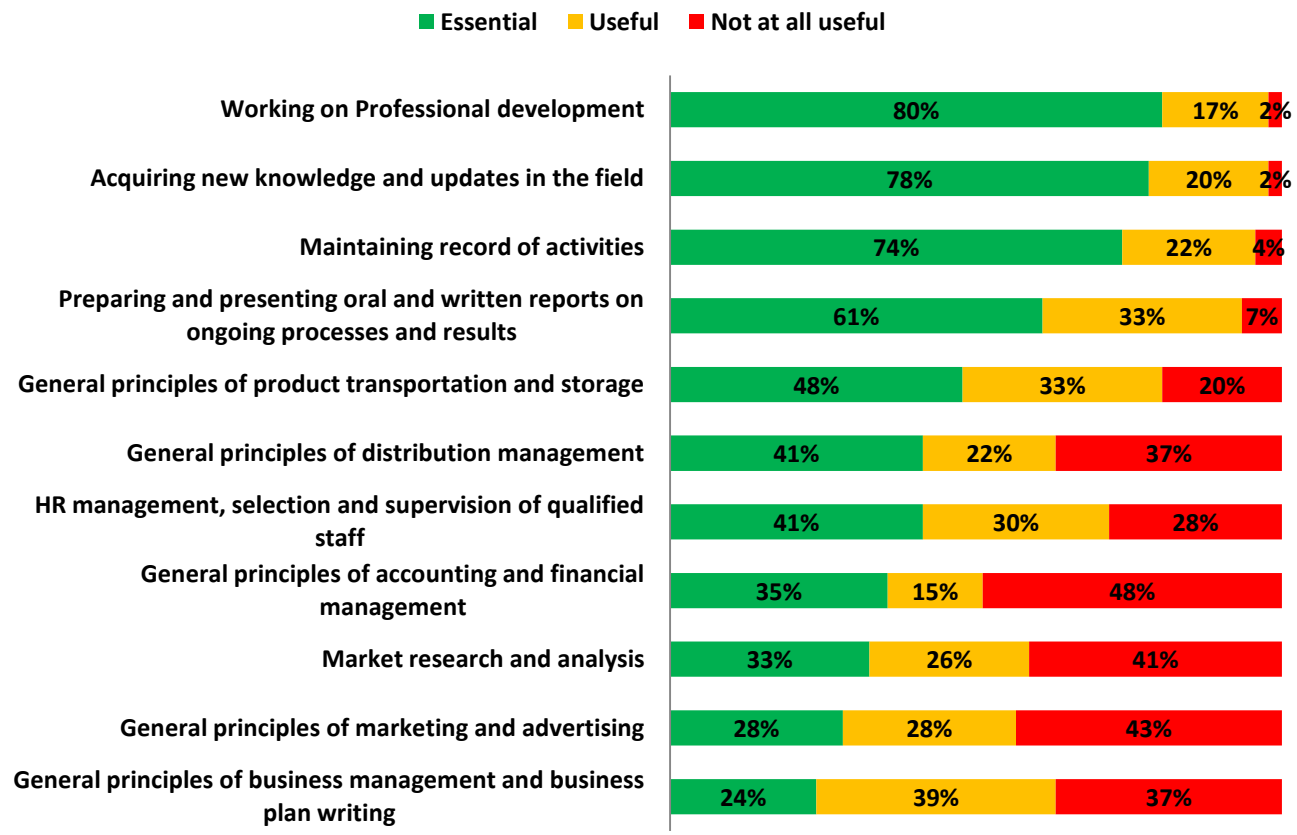



Businesses assess the level of general professional knowledge as very low among VET students.

### Managerial knowledge and skills

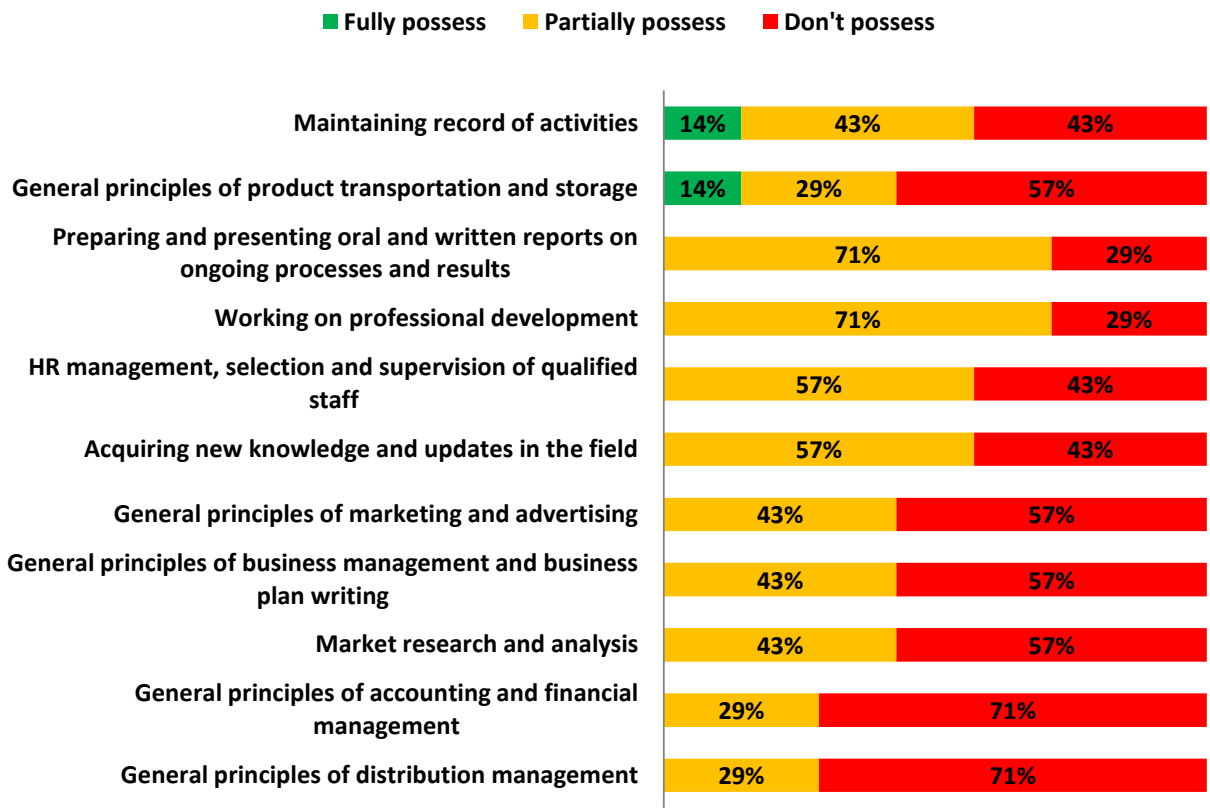
The list of managerial knowledge and skills are quite numerous and are presentedin the graph below:

Figure 31: Assessment of the importance of managerial knowledge and skills of employees




As with required professional background, one of the challenges of evaluating the demand for different managerial skills is that the interviewees have already indicated that managerial skills are not of great importance. Therefore, the above sub-categories should be evaluated in that context.However, during the in-depth interviews, interviewees did indicate demand as more practical “everyday” managerial skills, such as managing a livestock farm and accounting skills (e.g., invoicing, handling online Revenue Service accounts,filling out tax declarations, etc.).

Figure 32: Do the VET students possess the necessary managerial knowledge and skills?




The list of managerial knowledge and skills is long, but most businesses do not think that the VET students have them. In more detailed discussions, businesses put particular importance on the ability to work on personal development, but did not view the VET students as fully possessing that skill.

## Assessment of profession-specific skills by agricultural businesses

Out of the 46 questionnaires received in the skills mapping survey, we received the most (nine) for animal keeper/veterinary specialist, and one or two questionnaires for the other 13 professions. Below is a brief analysis of results for the each of the first four professions (with four or more completed questionnaires) and a short summary for the remaining 10 professions.

Figure 33: Skills mapping: number of filled questionnaires per profession

| # | Profession | N of filled questionnaires | Provided by VET |
|---|---|---|---|
| **1** | **Animal keeper - Veterinary service specialist** | **9** | Didi Jikhaishi |
| **2** | **Food processing specialist** | **6** | Didi Jikhaishi ATSU, but not functioning |
| **3** | **Plant grower** | **6** | Iberia (but focusing on gardening) |
| **4** | **Beekeeper** | **4** | Iberia |
| 5 | Agro-logistics operator | 3 | ATSU |
| 6 | Farmer | 3 | Iberia and ATSU are planning |
| 7 | Fish farmer | 3 | None |
| 8 | Refrigeration technician | 3 | ATSU, but not functioning |
| 9 | Agro-equipment electrician | 2 | Didi Jikhaishi has agro-equipment technician, which is slightly a different thing |
| 10 | Milk processor | 2 | None |
| 11 | Tractor operator | 2 | Didi Jikhaishi |
| 12 | Fruit & vegetable processor | 1 | ATSU has fruit grower, a slightly different thing, but it's not functioning anyways |
| 13 | Mechanical engineering technician | 1 | Didi Jikhaishi has agro-equipment technician, which is slightly a different thing |
| 14 | Viticulturist | 1 | ATSU, but not functioning |
| **Total** | | **46** | |

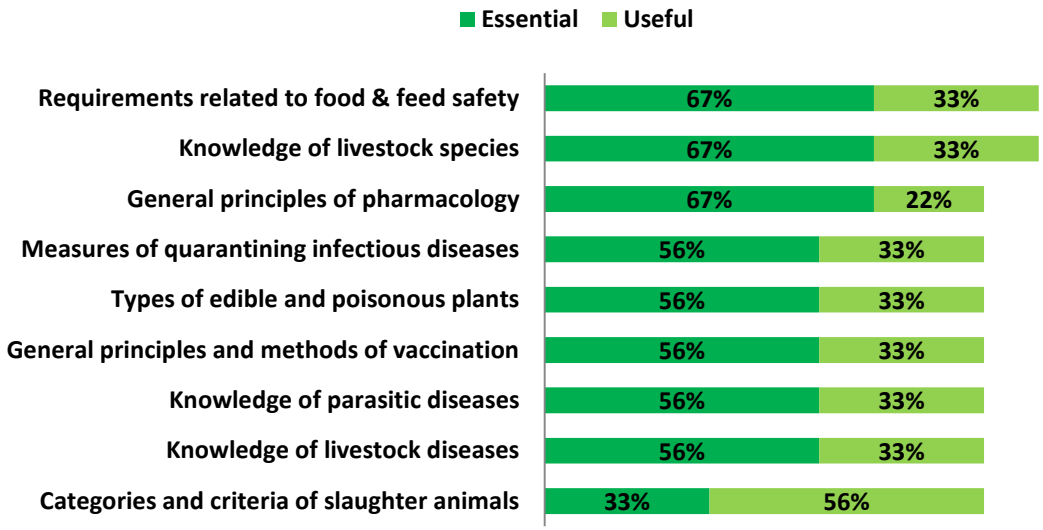
When we asked an open question about what would be the most desired top skill for a given profession, the answer often was "knowledge of modern technologies and equipment". Unlike subsistence farming, commercial agricultural businesses tend to be willing to use modern equipment, especially for food processing and mechanization, and to a lesser degree in livestock farms.

In terms of theoretical knowledge, most agricultural professions require basic knowledge, but some do require highly specific knowledge. For example, fishfarms require knowledge about appropriate injection dosage,electricians should know and strictly follow protocols in case of a system break-down (who to contact, etc.), and so on. Yet, most interviewed businesses placedmuch greater value on practical skills, such as how to milk a cow (for milk processors), for instance.

**Animal keeper-veterinary service specialist**

For analytical purposes, we combined responses for "animal keeper" and "veterinarian," as it became apparent that livestock and poultry farms were looking for some sort of a combination of the two professions. All of the nine businesses that reported needing this profession were livestock or poultry farms. There is a clear shortage or even lack of veterinarians in Imereti.Some businesses even outsource to Tbilisi because this need concerns the livestock health and consequently the final product quality.[31] Below we provide two graphs. One of the graphs summarizes the "knowledge," while the other one focuses on "skills."

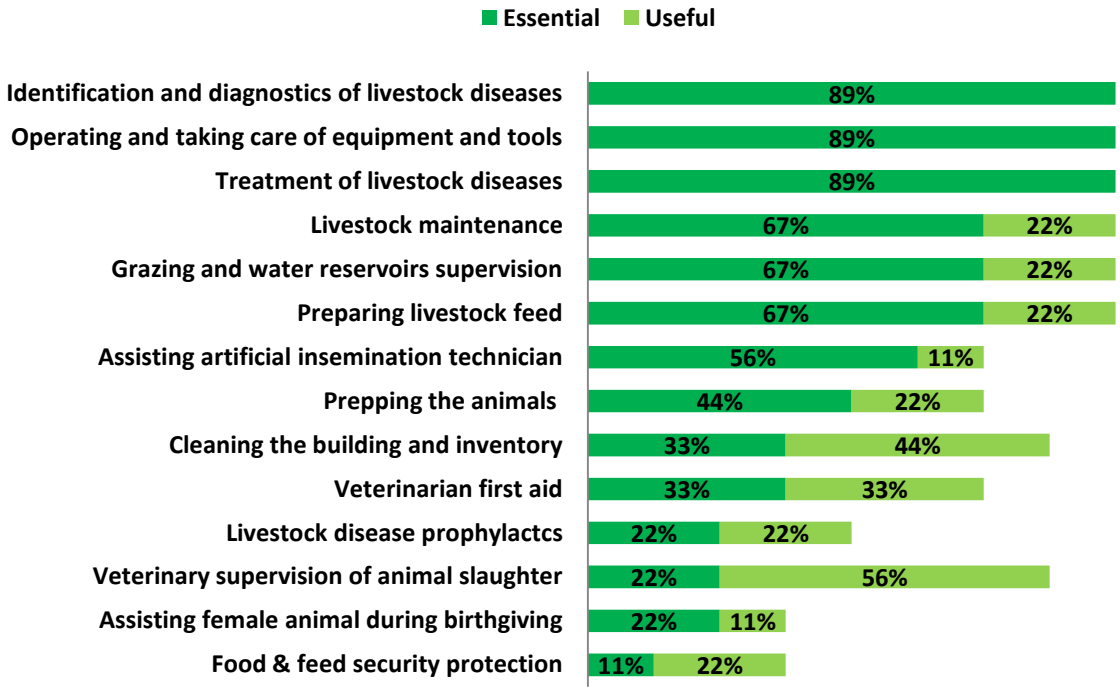
Figure 34: Assessment of the importance of professional knowledge for a veterinarian/animal keeper




The most demanded professional knowledge for the combination of a veterinarian and animal keeper are related to food and feed safety and knowledge of livestock species and relevant diseases. However, businesses also place greatimportance on practical skills, especially on disease identification, prophylactics and treatment.

[31] Interview with a poultry farm owner in Terjola (December 17, 2015)

Figure 35: Assessment of the importance of professional skills for a veterinarian/animal keeper



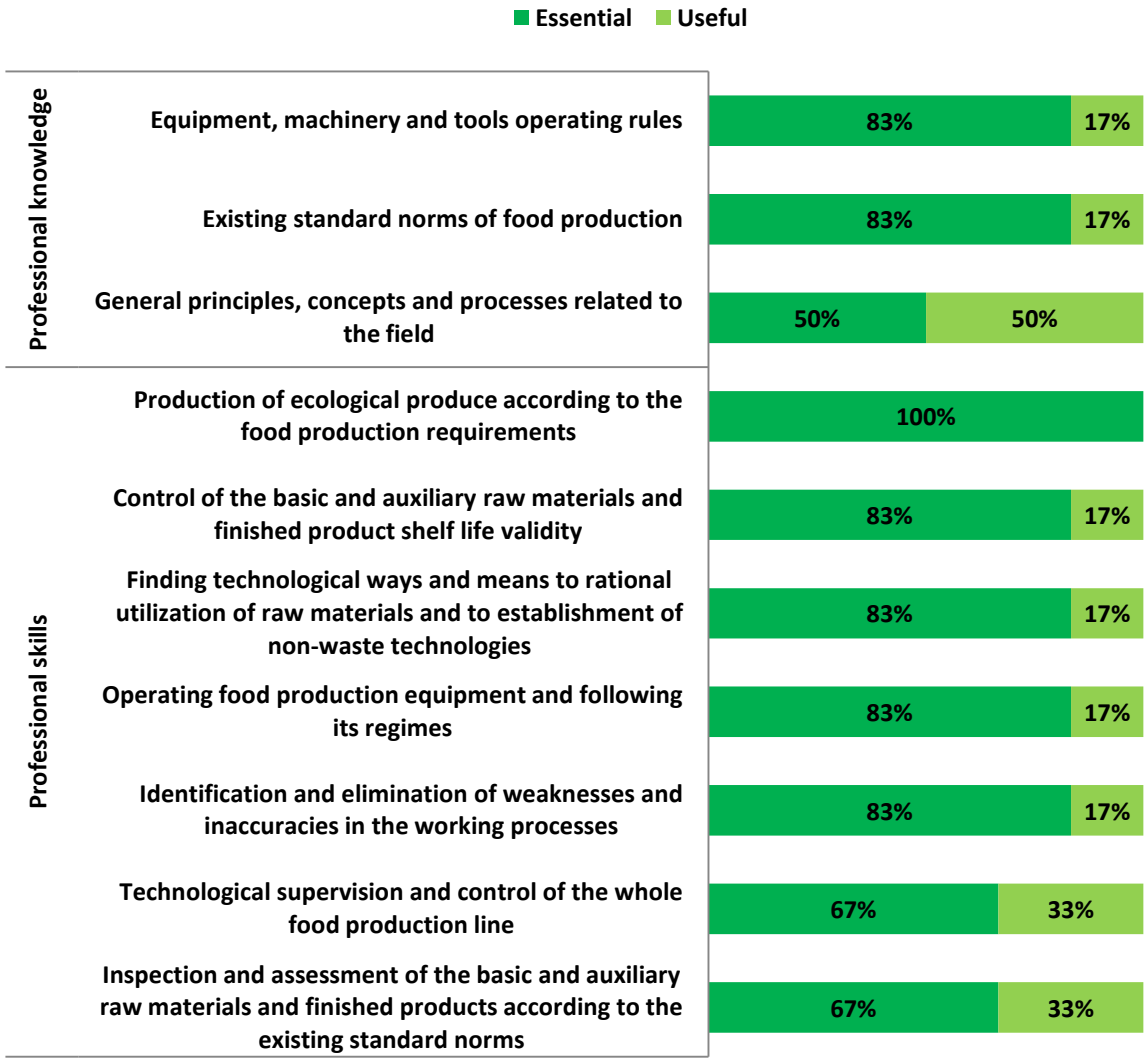

"Usefulness" of certain skills or knowledge is mainly based on the combination of two professions or from the specificity of the farm; for instance, some farms sell live chicken and therefore do not require slaughtering skills. Grazing and water reservoir supervision is included in the veterinary service specialist professional standards, yet only one agribusiness considers this knowledge essential and the rest, as useful (three businesses) or not useful at all (five businesses).

The only institution that provides veterinary education in Imereti is in Didi Jikhaishi, Samtredia (discussed elsewhere in the report).

**Food processing specialist**

Food processing specialist is often used interchangeably with "food technologist." From the six businesses that were interested in this profession two were from the tea subsector, two from the hazelnut subsector, one from the meat processing subsector, and one from the wheat subsector.

Figure 36: Assessment of the importance of professional knowledge and skills for a food processing specialist




One of the main issues for this profession is that companies need food processing specialists to be able to quickly learn and operate the modern equipment. Some companies address this issue by providing their own training[32], while others plan to do so in future.[33]All types of knowledge and skills that we enumerate the respondent businesses considered quite important.

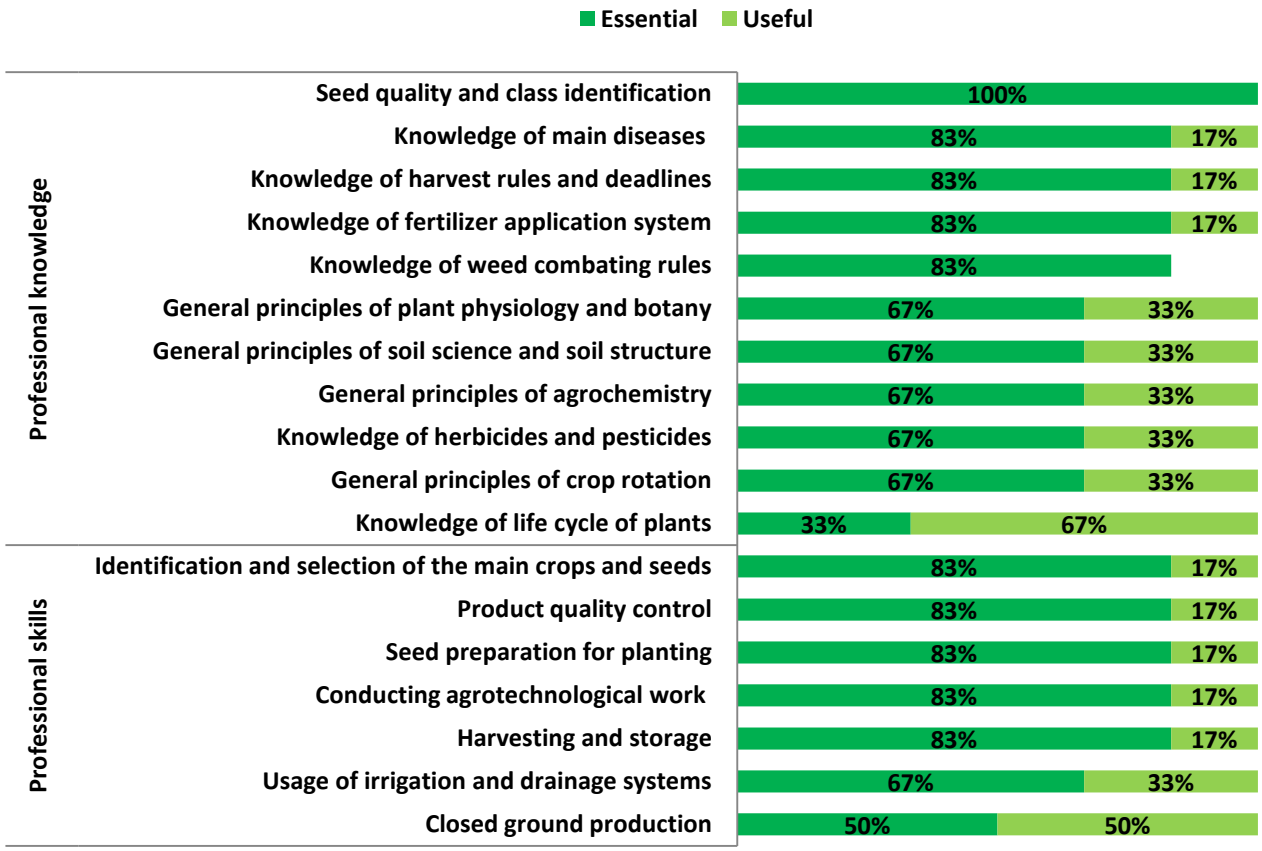
This profession is being taught in Didi JIkhaishi. ATSU also has it listed in its programs, but they have not received any students for the last few years. According to ATSU, there has been no demand from the potential students.

[32] Interview with a director of a cannery factory in Terjola (December 18, 2015)
[33] Interview with a director of a hazelnut factory in Vani (December 11, 2015)

**Plant grower**

Plant growers are not that needed in the greenhouses, but rather for plant and crop plantations. From the six businesses in our survey who said that they needed a plant grower, onewas from the tea sector, one from the potato sector, one from the hazelnut sector, one from the mixed plants sector, onefrom the greenhouse sector, and onefrom the cold storage sector.

Figure 37: Assessment of the importance of professional knowledge and skills for a plant grower

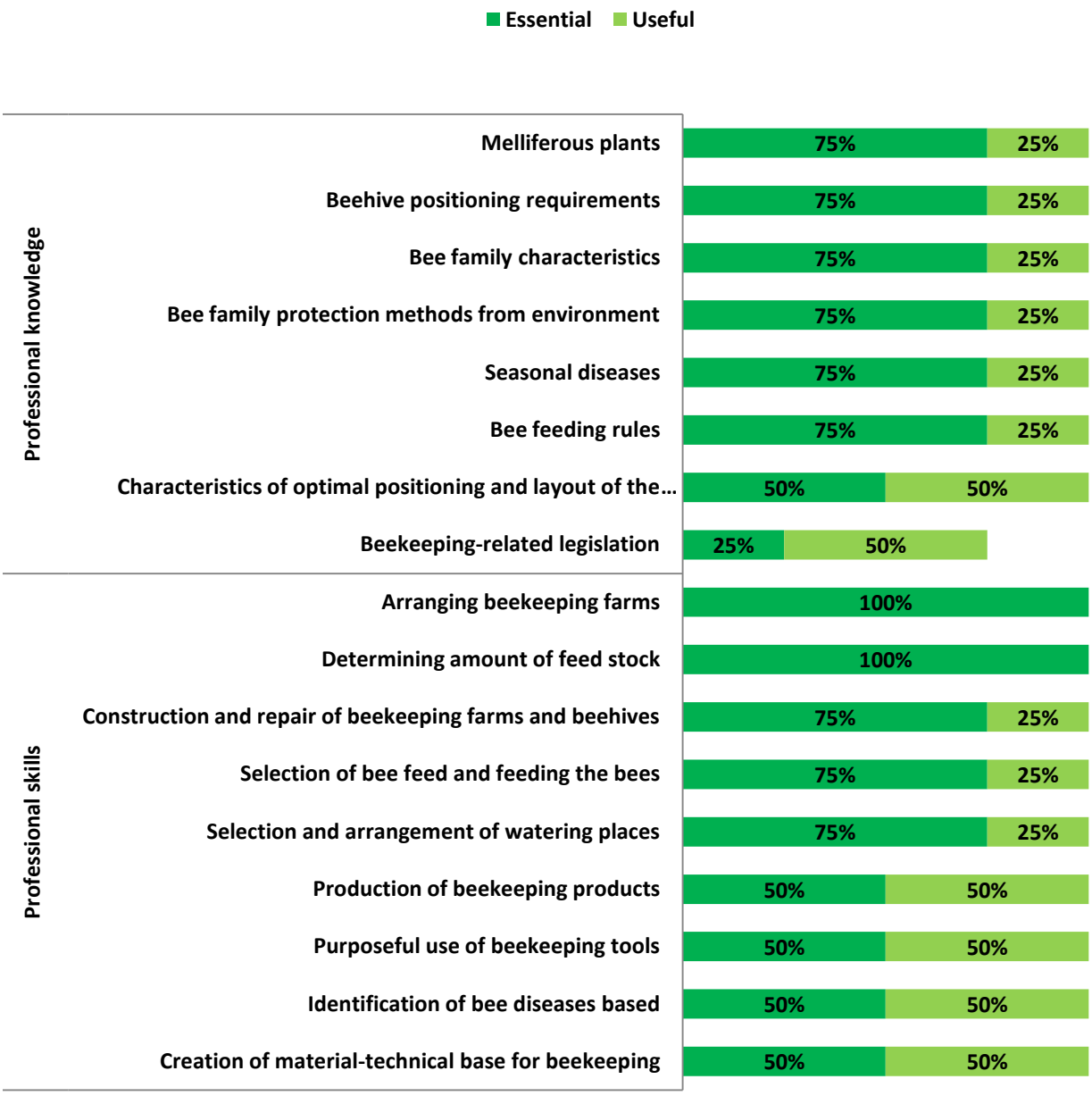



One of the surveyed businesses had experience of having a VET student for practical training. The student did not know some of the things he/she was supposed to be taught at a VET center, includingseed classes and quality characteristics (a skill deemed essential by all six agribusinesses), main plant diseases, or irrigation systems. But we could not verify which VET center this student came from; there is only one plantgrower specialty at the region's VET centers (Iberia College in Bagdati) and it is focused on decorative gardening.

**Beekeeper**

Obviously, all four businesses that were interested in beekeepers were from the beekeeping sector. While some are relatively large businesses, they are often family-centered. From our survey, two were individual entrepreneurs and two were LTDs.

Figure 38: Skills mapping: beekeeperprofessional skills




As with many other professions, practical skills in beekeeping are more valued than businesses knowledge. Only one out of four businesses said that knowledge ofbeekeeping legislation was essential. In terms of skills, all four businesses said the two essential skills are arranging beekeeping farms, and determining the appropriateamount offeed stock. In the discussions, beekeepers also said that “love for bees” and “love for work” is important, as well as keeping a high standard of hygiene.

The beekeeping specialty is offered by the Iberia College in Bagdati.

**Other professions**

For the remaining 10 professions, we have received answers from three or less businesses per profession. Overall, however, businesses placed more weight on practical skills rather than theoretical education.

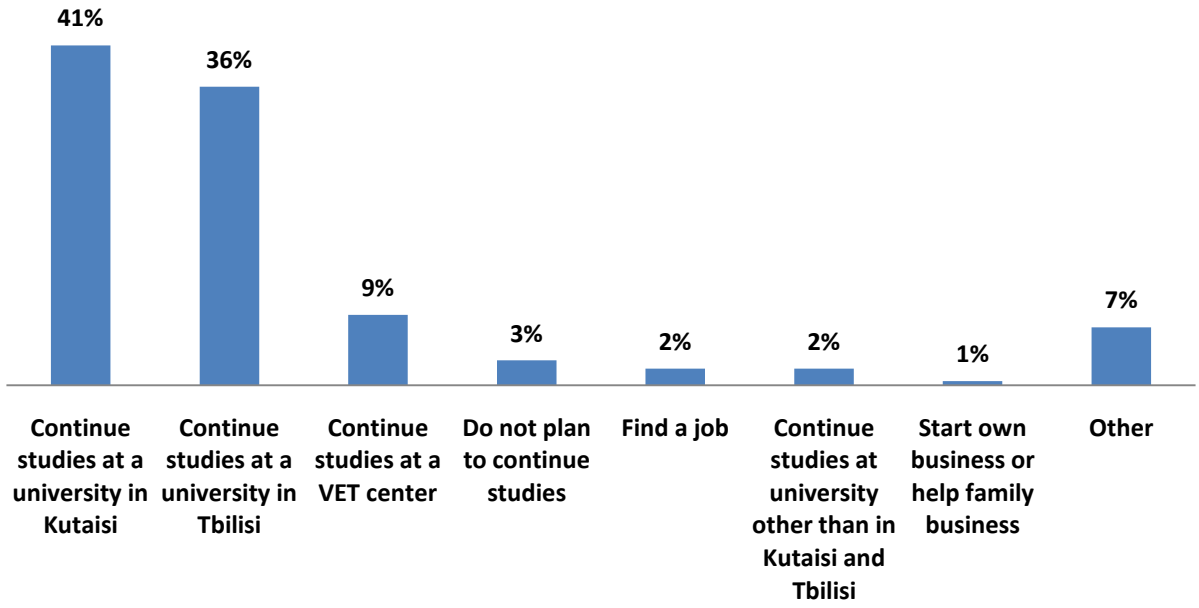
# Interest of students in VET education

One part of our research was to explore the opinion of young people aboutthe VET education and its relevance to their future careers. We surveyed 200 high school students in the years before graduation (grades 9-12) in six municipalities in Imereti and conducted additional 10 focus-groups to allow us to collect more nuanced information about their experience. For the research, we selected the largest schools in six municipalities that were closest to our partner VET institutions. In particular, we were interested to explore what post-graduation career plans the young people have and why; the level of awareness about the VET system and attitudes towards it; and to assess what practical experience the young people possess, particularly in agriculture.

## *Career plans and the role of VET education*

What young people intend to pursue post-graduation is akey pieceof information that donors and the government can use to plan future VET activities.

Figure 39: Plans of high school students after finishing the school




Not surprisingly, about 80% of respondents plan to continue studies at a university (though the national enrollment rate is approximately 70% according to the National Assessment and Examination Center; in 2015, 28,000 out of 40,000 managed to enroll at various universities).Very few young people plan to find a job or to start/join a business. In focus groups, we also asked students about their plans and only a few of them thought about starting their own business; most wanted to find a salaried job.According to the focus groups, those students who indicated they wouldpursue VET education were more likely to think about self-employment than those who choose to continue their education at a university.

*"Starting your own business should be very helpful to become rich, and to say honestly, it is much better than working for others. I will try to have my own company." Magkhlaki Focus group, male*

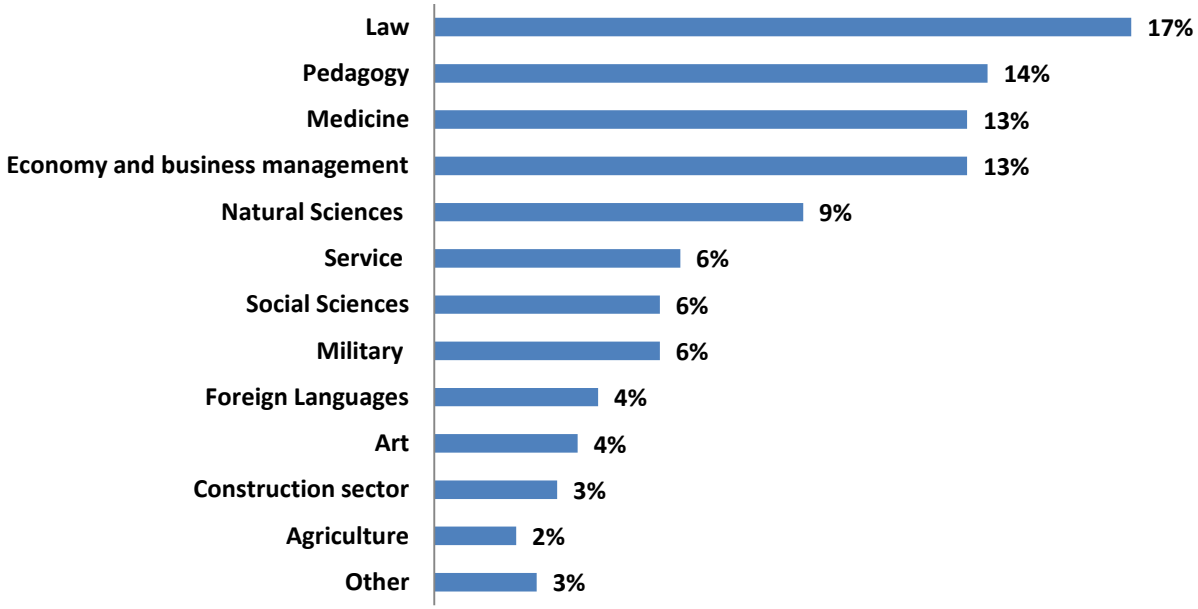
9% of the surveyed respondents might continue onto the VET education. This numbersuggests there is largepotential for VET. Yet, none could specify which VET institution they plan to attend.As for the fields, they were thinking mostly about the service/hospitality or medicine sectors, while others wanted to continue studying at the military schools.

In addition, there is clearly a sense amongst the students that the VET is for the less academically accomplished. This was expressed by most of those who wanted to go to university and had not considered VET, but was also accepted by many of those who wanted to go to VET colleges:

*"Unfortunately I cannot study well enough; I know that I am not smart, so I decided to choose a profession that will be financially profitable for my future, so I chose to become a stylist. My mother is working in a beauty salon and she will help me to find a job and be able to earn some money" Ivandidi focus group, female*

*"I can't study, because I consider myself that I am not smart enough to be able to study at school, that's why I don't want to waste threeyears." Ivandidi focus group, female*

**Figure 40: GeoWel survey of school-children in Imereti: the most popular specialties that students would like to pursue after school**




Apart from the general interest in the subject and aptitude for it, the three most frequent answers that people gave for their choices were:

- Recommendation by family/member or someone else
- Easier to find a job in this (selected) field

- Prestige

All of the above answers are employment-driven. Parents and students are choosing professions which they think will have higher chances of employability and a good salary. Some focus group quotes further confirm this:

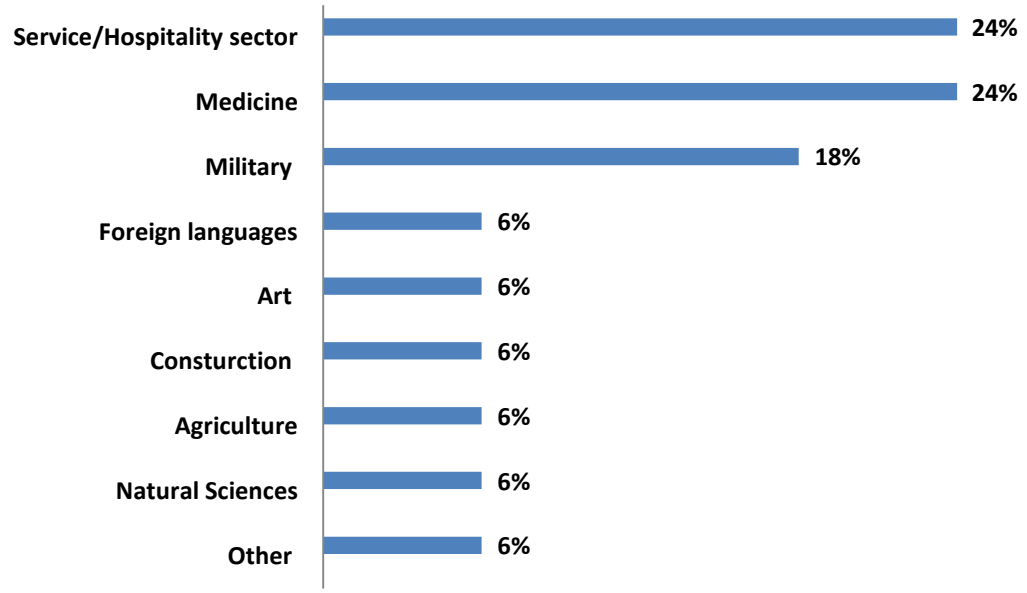
> *"My parents advised me to choose business administration, mostly because they can help me find a job after I graduate." Ianeti*focus group*, female*

> *"I was always thinking about becoming a doctor, because I was always interested in things related to the medical sphere. Currently, I am thinking about becoming a pharmacist.My parents advised me to choose it, because after graduation it will be much easier to find ajob." Chognari* focus group*, female*

Of those interested in university, agriculture is among the least popular specialties among the students. Only four students (2% of respondents) said that they would study agriculture at a university.

Below We also provide a breakdown of the number of students who would like to study at VET center. However, since the group is only made up of 17 students, it is hard to draw any strong conclusions.

**Figure 41: Breakdown of desired professions of 17 schoolchildren who said they would like to study at a VET center**



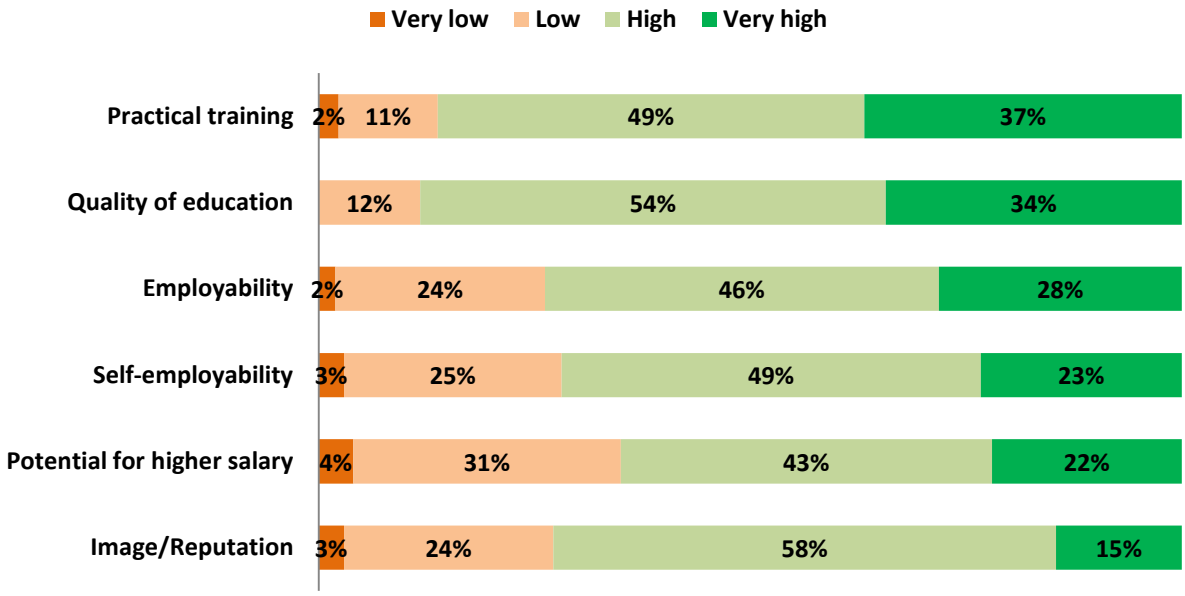

In VET, popular professions are service/hospitality sector (such as hair stylist, for example). Four respondents also considered the military service as a VET profession.

## *Awareness about the VET sector*

Almost half of students (49%) said that they did not know that the VET system existed at all. There is some difference between male students (53% do not know about the existence of the VET system) and female students (45% of female students do not knowabout the existence of the VET system). Of those

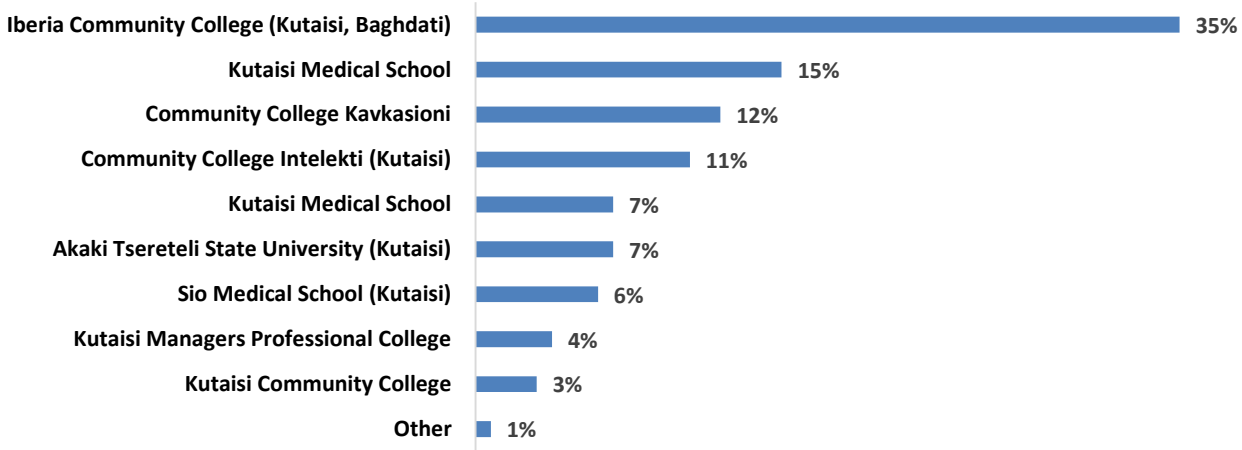
students who knew about the existence of the VET system, about 75% also knew about the VET schools in Imereti, having heard about them from friends and/or teachers.

**Figure 42: Assessment of different components of the VET system by school students who say they are aware of the VET institutions**




According to the survey answers to the closed questions, perceptions about the VET sector are generally positive. Students like the emphasis that theVET centers put on practical training. Yet, during the focus group discussions, students were not able to display much knowledge about the VET centers. About halfof the respondents have basic information about the VET education nationally or the availability of colleges or courses in Imereti. More specifically, they have heard about some colleges in Kutaisi, but they do not have any further information.

**Figure 43: The list of the VET centers named by the respondents who said they knew about the VET centers**



Even the ones that have already decided to continue their education at the VET institutions cannot provide much detail. They know professions they want to study, but have notyet selected the colleges they wanted to apply to. In general, there is a higher level of awareness about the community college "Iberia" and Didi Jikhaishi College compared to the other mentioned institutions.

> *"I have the information about the VET college in Kutaisi, the name is 'Iberia,'you can study there forfree and can become a cook, electrician, stylist, etc." Magkhlaki focus group, female*

Respondents from Samtredia were generally able to recall Didi Jikhahisi professional college:

> *"We have acollege in our village.As I know, mostly they provide courses related to agriculture. I am sure this is not a good place to continue my studies. Firstly, I have no idea where I plan to start working after I graduate. Secondly, I doubt the quality provided by this college." Didi Jikhaishi focus group, male*

The lack of knowledge is a little daunting given that some of these VET schools (e.g., Iberia) had previously given a presentation at schools about the courses.As one student explained:

> *"During the orientation lessons, we had some guests, for example from the Iberia Community College. She explained in detail what professions are available there and said that studying is free. Also she invited us to visit them in Kutaisi or Baghdati." Vartsikhe focus group, female*

Our research showedthat respondents have very limited information about the availability of agriculture courses at VET institutions. Only respondents from Samtredia town hadheard of the Didi Jikhaishi College that provides courses related to agriculture. And no respondent knew that Iberia College or Akaki Tsereteli State University were providing agricultural VET programs. This is not surprising, since so few of them had suggested that they have any interest in studying agriculture.

All ofthe respondents have peers who have continued or are going to continue studies at different VET colleges. Some of them are classmates who are going to leave school after completion of 9$^{th}$ grade, or relatives and neighbors whoare studying to become dentists, electricians, tractor technicians, pharmacists, nurses or tailors.

However, not only do people lack knowledge about agricultural VET, some question the necessity of formal training.

> *"I have not heard about any agriculturalVET programs, moreover, I think that agricultural activities do not require studies.For example, to work in greenhouse or have your own winery is something that you can handle by yourself. But if you want to become a veterinarian, you need to study at auniversity, not at aVET institution." Dimi focus group, male*

Majority of the respondents hadheard of positive experiences from the peers who are currently studying at the VET institutions. The positive experience is mostly related to the VET administration'seffortsto help the students with finding a job.

*"My neighbor was studying atone of the colleges in Kutaisi. She studied massage and was so happy as her college helped her to find a job and now she is working." Ianeti focus group, female*

*"One of our classmates applied for one VET college and is very satisfied because he is doing the internship at Tegeta Motors and hopefully will be able to continue working there." Dimi focus group, male*

It is interesting to mention that one of the students' peers has been studying at Didi Jikhahisi College, where:

*"…as he said lectures are quite interesting. The college cooperates with LLCMeqaniztori. They have also purchased some equipment for practicing onthe territory of the college. So he was quite satisfied." Didi Jikhaishi focus group, male*

At the same time some negative experiences are connected to Didi Jikhaishi College. A respondent from Didi Jikhaishi village states:

*"Our friend was studying at Didi Jikhaishi College to become a tractor operator;he said that it was very bad, as actually students weren't able to drive tractors.Unfortunately, there was no any other option, because his family has no money to spend on his education, so he graduated from the college." Didi Jikhaishifocus group, male*

Majority of the respondents identify government funding as the main reason for continuing education at the VET institutions. Other reasons include self-perceived low academic skillsand better employment prospects.

While describing common characteristics of the peers who are studying at the VET colleges, majority of the respondents mention laziness, less interest or ability in/of studying, lack offinancial resources and the role of parents during choosing the education for their future.

Some respondents have a positive attitude towards the vocational education, mainly because it gives them opportunity to have a profession to earn some money and hopefully to be well paid in the future.

*"I don't think that everyone who is choosing the VET does not study well enough. One of my relatives studied very well at school but she wanted to become a cook and applied for a VET institution in Kutaisi.Now she is working ata restaurant and plans to open a small bakery."Ivandidi focus group, female*

Furthermore, the majority of the respondents explains that the vocational education is especially good for those who areunable to study at universities due to lack of financial resources or learning skills.

*"For those who did not study well enough at school, VET is a chance to get a profession and be hired by someone, or even start their own business." Shua Gora focus group, male*

*"Usually people who lack financial resources or aren't able to study well choose the VET institutions, otherwise they do not. Actually it is very good option for them, but not for us. It is much better then standing in the street, but you will never be able to find a good job." Ianeti focus group, male*

*"I think there is also a trend that shows how important it is to have an university diploma, no matter whether one can find a job or not. If someone isn't clever enough to be a good lawyer, why should they have the lawyer diploma, I think that it is much better to be a good cook rather than to be a bad lawyer. When there is a very high competition, you won't be able to find a job as a lawyer, because you are a bad one, but if you are a good cook you will be able to find a place to work and even earn much more. This is a huge difference we need to understand." Didi Jikhaishi focus group, female*

In spite of the positive attitudes, there are significant negative beliefs related to the vocationaleducation; primarily that VET education is less profitable and is only for those who are not"smart enough".

*"I think sometimes university diploma isn't enough and can you imagine what are those people going to do when they don't even have a diploma? " Dimifocus group, male*

*"Speaking honestly "grekhia"[thisis a slang for something that is a shame; thatthere is common public perception that something particular is shameful to do or think] studying at a VET." Ianeti focus group, male*

*"They aren't clever. To say honestly, I doubt about their future. They will only be able to do the same work every day. It sounds so boring." Geguti focus group, male*

One of the concerns that the high school students expressed was that it is hard to make big career decisions in the 9$^{th}$ grade. According to the participants of thefocus groups, one might change their mind about a profession, and will find him/herself locked intoa VET profession that he/she chose in the 9$^{th}$ grade, since it is basically impossible to continue studies at a university if you attend VET schools(under the current system, university requires a complete (12-year) high school diploma).

*"Even though people think that VET is not good, I think it is very useful. But I think that leaving school from 9$^{th}$grade should be forbidden, because no one is ready to make serious decisions in this age." Ivandidi focus group, male*

*"I will never understand why people leaveschool early. For example, my classmates who left school now thinkthat it would have been better to graduate the school and then make their decision, because they aren't eligible to apply for any kind of universities anymore. The only way they have is the VET institutions."Didi Jikhaishifocus group, female*

Some consider that it is much better to leave school andinstead have your own profession more quickly.

*"You know that people who are applying for the VET centers are not good students;furthermore, for them studying is a bit difficult. So, can you imagine that they will be able to study all the material during the lastthreeyears [of school]? It is impossible, so they will waste threeyears at school instead of going toany college and have the profession." Ivandidifocus group, male*

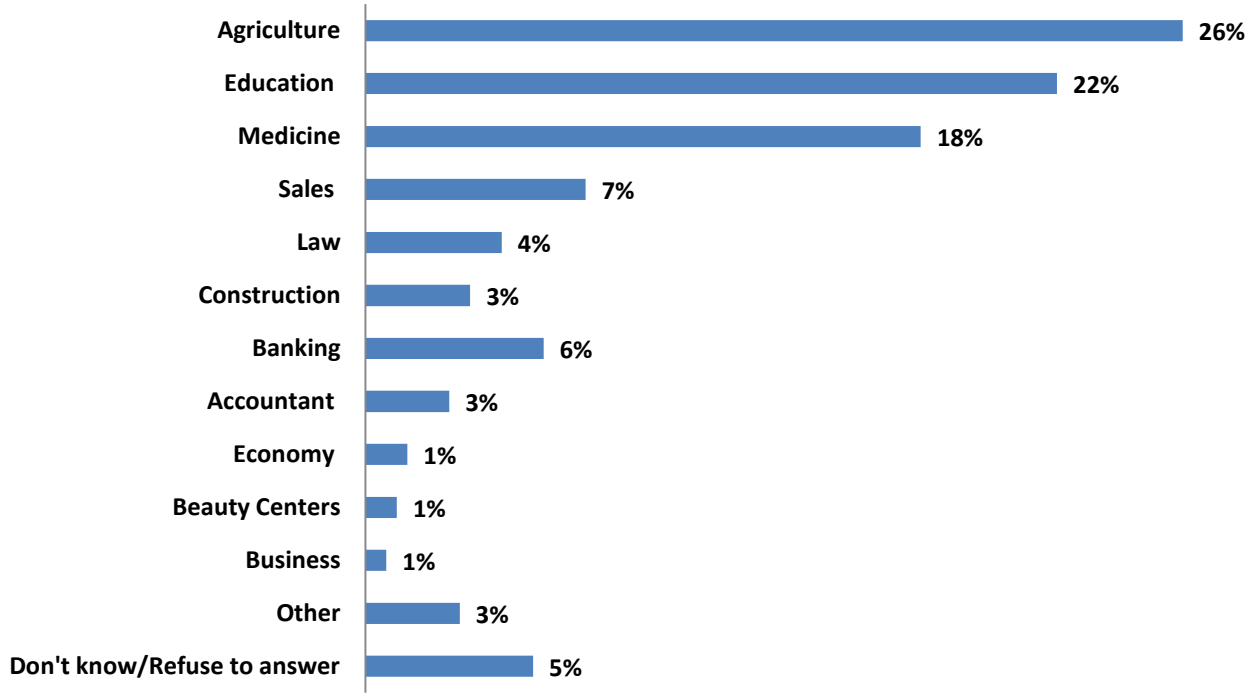
It is interesting to note that among the respondents, one was planning to continue studying with a private trainer in order to become an electrician. He stated that the main reason for refusing the VET opportunities was its low quality.

> *"The main reason for that is that I think the VET quality isn't enough and mainly I don't need to have any certificate, as I want to have practical knowledge, the best decision is to go and study with someone very experienced and not apply for any colleges". Ivandidifocus group, male*

In our previous research for World Vision,[34] we have come across similar experiences in Samtskhe-Javakheti in sectors that are considered traditionally dominated by ethnic Armenians, such as shoemaking, for example. There, it is traditionalthat young people study until 9th grade and then go off to be apprentices with relatives who own shoeshops or are master shoemaker.

## *Labor market perceptions of students*

**Figure 44: What do you think are the professions with the highest employment?**




Students also named the professions that, by their perception have the highest employment rates.the fact that education (i.e. teaching at schools) ranked high is not surprising. Schools are one of the largest formal employment providers in the regions and the respondents are students. The perceived high rate of employmentin agriculture (26% of respondents think that this sector has the highest employment) does not necessarilymean formal employment,. In this case, respondents meant that "everybody who works on theirown land"-- similar to how GeoStat counts as employment.

[34] GeoWel study for World Vision (2015), Economic Opportunities for the Youth in Kakheti, Samtskhe-Javakheti, and Imereti

Yet, 78% of the respondents said that they are not interested in working in agriculture at all. Focus group participants also shared this sentiment. Among the reasons forthis limited interest are the physical strength which is required to work in agriculture, lack of profitability (judging from the family agricultural experience), and lack of prestige.

> *"The main reason is that it is very difficult, requires hardwork and physical strength." Dimi focus group, male*

> *"This land field is never respected as much as it needs to be."Male, Shua Gora focus group, male*

Also, very few respondents imagine that they will start working in agriculture, and if so, only if it is the single way to survive. In these cases, the students mostly identified greenhouses, farms, wine growing, hazelnut, fruits and beekeeping as potential activities.

According to focus group discussions, all of the participants consider that finding a job in their region is quite difficult, but believethat finding formal employment in agriculture is much more difficult. Connecting to agricultural businesses might happen if you know the right people. Information-sharing and recruitment happens through the word-of-mouth. The only way to work in agriculture is to have your own business, they asserted, but they do not view such business as profitable in comparison to other businesses, such as shops or pharmacy stores.

Majority of the survey respondents have never been employed, but there are few cases when the students have been employed mostly in their neighbors' greenhouses or hazelnut plantations. Also, as the respondents indicated to an emerging trend among the young people to obtain passports in order to work on hazelnut plantations in Turkey during summer and to earn some money to help their families.

# Annexes

## *1. Agricultural business in-depth interview guide*

Key questions for discussion:

1. The current understanding and use of VET
2. Skill needs
3. Current strategies for finding employees
4. Interest in apprenticeships
5. Interest in engaging with the VET system, as well as

More detailed:

6. Number of employees, available. Trend for the last few years – increasing or decreasing?
7. Profile of employees (education, skills, profession, geographic area, gender break-down)
8. Turnover of employees?
9. How one would get a job at this company? Is there a demand or over-supply of qualified people?
10. What professions are particularly in demand?
11. Experience vs education? (youth in perspective)
12. A program/internship for youth?
13. How do new employees get the necessary training at work? Any particular programs?
14. Knowledge of/cooperation with VET centers in the region
15. Interest and experience in apprenticeships

## *2. Government representativesinterview guide*

Key questions for the discussion:

1. Main strategic document s and policies;
2. Newreforms and main achievements;
3. Sectoral Groups, facilitators and Sectoral Councils;
4. VET program authorization process/scheme;
5. Information ongoing project;
6. Experience of foreign countries;
7. Popularization of VET institutions;
8. Future trends

## *3. Sectoral Working Group and Sectoral Council member interview guide*

Key questions for the discussion:

1. How did you come about to participate in the working group(s)?
2. How did they contact you?
3. What was your motivation to participate?
4. What were the terms of participation?
5. With what frequency did you participate?
6. What was the working procedure of the working group?
7. What kind of input did you provide to the working group?
8. What did you like and did not like in a) the working process, b) in the professional standards?
9. Any recommendations?

## *4. Skills mapping questionnaire*

### 4.1 Skills mapping farmer

**Farmer Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Laws, policies and strategies related to agriculture in Georgia | | | | | | |
| Regional agricultural market structure and analysis | | | | | | |
| Types of general farmer information and consultation center services | | | | | | |
| Food security legislation | | | | | | |
| General principles of agronomy | | | | | | |
| Rules of storage, preparation and application of various types of fertilizers, pesticides and other modes | | | | | | |
| Biology, botany and physiology of plants | | | | | | |
| Types and structure of soil, their physical and chemical properties and general rules of cultivation | | | | | | |
| Irrigation methods and modern irrigation systems | | | | | | |
| Irrigation timetables and norms according to various crops | | | | | | |
| Rules of usage of plant protection products | | | | | | |
| Greenhouse types and structures and rules of their layout and arrangements | | | | | | |
| Biological principles of seed production | | | | | | |
| General quality indicators of seeds and processing rules according to crop types | | | | | | |
| Biology and various breeds of animals, birds, bees and fish | | | | | | |
| Norms and conditions of keeping adolescent and adult animals | | | | | | |
| Animal nutrition technology and regime | | | | | | |
| Types of agricultural machinery and equipment and general principles of their usage | | | | | | |
| Food product quality standards | | | | | | |
| Other, please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Preparing soil for and planting, raising and harvesting the field and vegetable crops | | | | | | |
| Preparing soil for and planting, raising and harvesting Perennial crops (horticulture, viticulture, subtropical crops and tea) | | | | | | |
| Keeping and maintaining animals, bees and fish | | | | | | |
| Operating agricultural equipment | | | | | | |
| Types, selection and utilization of climate control systems | | | | | | |
| Identification and combating diseases and pests | | | | | | |
| Utilization of plant protection, pesticides, fertilizers | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Production of agricultural products and food | | | | | | |
| Ensuring quality of agricultural produce | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.2 Skills mapping beekeeper

**Beekeeper Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. On a scale, please assess the usefulness of each of these professional skills you require employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Beekeeping-related legislation, including requirements related to bee import prohibition | | | | | | |
| Melliferous plants and their blossoming timeframes | | | | | | |
| Characteristics of optimal positioning and layout of the beekeeping farm | | | | | | |
| Beehive positioning requirements in the beekeeping farms | | | | | | |
| Bee family characteristics, appropriate time and conditions of acquisition | | | | | | |
| Bee family protection methods from impact of environmental factors (sun, wind and rain) | | | | | | |
| Seasonal diseases | | | | | | |
| Bee feeding rules | | | | | | |
| Other, please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Arranging beekeeping farms | | | | | | |
| Creation of material-technical base for beekeeping | | | | | | |
| Selection of bee feed and feeding the bees | | | | | | |
| Construction and repair of beekeeping farms and beehives | | | | | | |
| Production of beekeeping products and following technological regime of production | | | | | | |
| Selection and arrangement of watering places and water reservoir | | | | | | |
| Identification of bee diseases based on symptoms and combating them | | | | | | |
| Determining amount of feed stock | | | | | | |
| Purposeful use of beekeeping tools, equipment and technologies | | | | | | |
| Other, please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Maintaining record of activities | | | | | | |
| Other, please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.3 Skills mapping fisher

**Fisher Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | **Do trainees have this skill?** |
|---|---|---|

| | Essential | Useful | Not at all useful | Yes | Partial | No |
|---|---|---|---|---|---|---|
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | Essential | Useful | Not at all useful | Yes | Partial | No |
| **Professional knowledge** | | | | | | |
| Species of fish (including protected species) and other hydrobionts | | | | | | |
| Meteorological, hydrological and geomorphological features of fish and fishing habitat | | | | | | |
| Major diseases and symptoms of fish and aquatic species | | | | | | |
| Rules, means and methods of breeding of fish | | | | | | |
| Rules, means and methods of fishing | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Principles of keeping track of the fish resources | | | | | | |
| Types and rules of utilization of tools, machinery, equipment, devices and technologies of fish breeding and fishing | | | | | | |
| Principles and methods of fish processing, storage and packaging | | | | | | |
| Rules and methods of water protection | | | | | | |
| Marine mapping and reading the map | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Equipping the aquarium according to the livelihood requirements of the hydrobionts | | | | | | |
| Breeding, feeding and taking care of the aquarium hydrobionts | | | | | | |
| Controlling and keeping track of the hydrobiont habitat quality | | | | | | |
| Diagnostics, therapy and prophylactics of the hydrobiont diseases | | | | | | |
| Preparing sketches and constructing of the technical equipment of aquaculture and marine cultures | | | | | | |
| Operating and repairing the technical equipment | | | | | | |
| Conducting hydrological research in fish ponds (taking hydrobiological and hydrochemical samples and processing them) | | | | | | |
| Primary processing of the fish and sea products, determining and controlling the product quality and safety | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.4 Skills mapping plant grower

**Plant Grower Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |

| **Personal characteristics** | | | | | | |
|---|---|---|---|---|---|---|
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| General principles of plant physiology and botany | | | | | | |
| General principles of soil science and soil structure, its chemical and mechanical composition and properties | | | | | | |
| General principles of crop rotation and their classification | | | | | | |
| Seed quality and class identification standards and seed quality verification methods | | | | | | |
| General principles of agrochemistry | | | | | | |
| Knowledge of herbicides and pesticides registered in Georgia, | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| and rules and norms of their usage | | | | | | |
| Knowledge of life cycle of plants, their morphological features and biological characteristics | | | | | | |
| Knowledge of fertilizer application system | | | | | | |
| Knowledge of weed combating rules | | | | | | |
| Knowledge of main diseases and pests of crops and means of combating them | | | | | | |
| Knowledge of harvest rules and deadlines | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Identification and selection of the main crops and seeds | | | | | | |
| Product quality control | | | | | | |
| Seed preparation for planting | | | | | | |
| Conducting agrotechnological work (soil treatment, crop rotation, planting, plant protection) | | | | | | |
| Closed ground production (greenhouse arrangement, monitoring irrigation and drainage system workflow, manufacture of pesticides, watering and feeding the plants, identification of diseases and pests) | | | | | | |
| Harvesting and storage | | | | | | |
| Usage of irrigation and drainage systems | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.5 Skills mapping viticulturist

**Viticulturist Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Food safety legislation | | | | | | |
| Generalproduct quality indicators, their inspection methods and defective product elimination rules | | | | | | |
| Knowledge of grape varieties, their biology, chemical composition | | | | | | |
| Soil types, their agricultural characteristics, chemical elements and soil treatment timeframes and rules | | | | | | |
| Vine planting times and planting and fertilization rules (doses and timeframes of inorganic and organic fertilizer injection) | | | | | | |
| Rules of plant protection product use and measures of | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| combating pests and diseases | | | | | | |
| Knowledge of vine irrigation periods, irrigation systems, needs and norms | | | | | | |
| General winemaking concepts, principles and processes | | | | | | |
| Other. Please, specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Protection of product quality and safety | | | | | | |
| Soil analysis, preparation for planting vineyard, treatment and cultivation | | | | | | |
| Establishing and taking care of the vineyard, including usage of equipment and plant protection means | | | | | | |
| Harvesting and processing | | | | | | |
| Combating stressful factors (High temperature, frost, hail, flood, wind and hurricane, soil erosion) | | | | | | |
| Feeding the vine, fertilizing and eliminating problems | | | | | | |
| Exploitation and repair of irrigation and drainage systems | | | | | | |
| Site preparation for grape processing | | | | | | |
| Processing grape according to various technological schemes | | | | | | |
| Technological processing of wine and bottling | | | | | | |
| Taking care of and proper usage of technical equipment and devices | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.5 Skills mapping food processing specialist

**Food Processing Specialist Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| General principles, concepts and processes related to the field | | | | | | |
| Equipment, machinery and tools operating rules | | | | | | |
| Existing standard norms of food production | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Technological supervision and control of the whole food production line | | | | | | |
| Control of the basic and auxiliary raw materials and finished product shelf life validity | | | | | | |
| Finding technological ways and means to rational | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| utilization of raw materials and to establishment of non-waste technologies | | | | | | |
| Operating food production equipment and following its regimes | | | | | | |
| Identification and elimination of weaknesses and inaccuracies in the working processes | | | | | | |
| Production of ecological produce according to the food production requirements | | | | | | |
| Inspection and assessment of the basic and auxiliary raw materials and finished products according to the existing standard norms | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.6 Fruit and vegetable processing specialist

*Fruit & Vegetable Processor Skills Mapping*

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Classification of fruits and vegetables | | | | | | |
| General principles, concepts and processes of fruit and vegetable processing | | | | | | |
| Theoretical principles and basic methods of fruit and vegetable processing and general principles of operating related equipment and tools | | | | | | |
| Morphological and phytochemical characteristics of fruits and vegetables and their role in nutrition physiology | | | | | | |
| Fruit and vegetable shelf life characteristics, basic theoretical principles of storage and storage regimes | | | | | | |
| Specifics of raw materials, preparation technology and delivery forms | | | | | | |
| Types of juice, jam, compote, fruit puree, canned fruit, | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| marinaded fruit, pickled fruit, technological principles of their production and operating principles of related equipment and tools | | | | | | |
| Types and processing procedures of packaging containers and reservoirs | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Primary fruit processing | | | | | | |
| Product quality control safety protection | | | | | | |
| Freezing fruits and vegetables | | | | | | |
| Drying fruits and vegetables | | | | | | |
| Production of fruit and vegetable products (juice, jam, compote, fruit puree, canned fruit, marinaded fruit, pickled fruit) | | | | | | |
| Prepearation of packaging | | | | | | |
| Using and taking care of the fruit and vegetable processing machinery and equipment | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |

| 3 most important skills | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.7 Skills mapping meat processor

**Meat Processor Skills Mapping**

| Name | |
|---|---|
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| Yes | 1 |
|---|---|
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | Essential | Useful | Not at all useful | Yes | Partial | No |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Current legislation related to food | | | | | | |
| General principles of food safety | | | | | | |
| Chemical composition and physical and biochemical characteristics of agricultural animals (cow, buffalo, sheep, goat) | | | | | | |
| Specifics of meat processing plant activities | | | | | | |
| Types of meat and meat production (sausages, ham and semi-finished products) technologies, methods and regimes | | | | | | |
| Types of and utilization rules of meat processing equipment | | | | | | |
| Standardization and certification procedures | | | | | | |
| Inspection aspectsand accreditation procedures | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Recognized systems of internal prevention control | | | | | | |
| Meaning of traceability and critical control point (CCP) effect | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Selection of processing method according to meat type, processing an preparing meat for sale | | | | | | |
| Utilization, assembly, disassembly andinspection of meat processing equipment and technology regime measuring tools | | | | | | |
| Conducting organoleptic and chemical analysis of meat products | | | | | | |
| Identification of problems, data collection and analysis for elimination of problems and making argumentative conclusions | | | | | | |
| Legal correction/adjustment of accounting and financial activity in case of need | | | | | | |
| Procurement and introduction of eurostandard technologies in the enterprise | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.8 Skills mapping milk processor

**Milk Processor Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Milk composition, its physical and chemical properties | | | | | | |
| Milk processing stages and norms | | | | | | |
| Milk testing rules and milk selection criteria according to dairy products | | | | | | |
| Methods and means of milk filtration, separation, pasteurization and other processes | | | | | | |
| Milk storage temperatures according to various milk processing stages | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Provision of food safety and traceability | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Milk collection, sorting and processing for reservation | | | | | | |
| Mechanical processing of milk (separation, normalization, homogenization) | | | | | | |
| Thermal processing of milk (pasteurization, sterilization) | | | | | | |
| Production of dairy products (potable milk and dairy products, cottage cheese, sour cream, cheese, butter, condensed milk, ice-cream) | | | | | | |
| Conducting analysis of milk and dairy product conditions and their chemical composition | | | | | | |
| Operating and taking care of dairy processing equipment and devices | | | | | | |
| Other. Please, specify: | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.9 Skills mapping animal keeper-veterinary service specialist

**Animal Keeper-Veterinary Service Specialist Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Requirements related to food & feed safety, veterinary and plant protection code, associated hazards and food quality testing methods | | | | | | |
| Knowledge of livestock species, their anatomical and physiological features, physical examination methods and techniques | | | | | | |
| Knowledge of livestock diseases, their identification and treatment methods | | | | | | |
| General principles of pharmacology and Classification and storage and use of medicine | | | | | | |
| General principles and methods of vaccination | | | | | | |
| Knowledge of parasitic diseases, their classification and methods of diagnosis, prophylactics and treatment | | | | | | |
| Measures and medicine restricting and quarantining infectious diseases and rules of their usage | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Types of edible and poisonous plants | | | | | | |
| Categories and criteria of slaughter animals | | | | | | |
| **Professional skills** | | | | | | |
| Livestock maintenance, including taking care of the stalls care and feeding the livestock according to age and diet, taking care of animal storage conditions, farm microclimate control and diseased animal isolation | | | | | | |
| Preparing livestock feed | | | | | | |
| Assisting female animal during birth giving | | | | | | |
| Assisting artificial insemination technician | | | | | | |
| Prepping the animals (shaving sheep, milking cows, prepping for slaughtering, egg gathering) | | | | | | |
| Operating and taking care of equipment and tools | | | | | | |
| Cleaning the building and inventory | | | | | | |
| Food & feed security protection | | | | | | |
| Livestock disease prophylactcs (injection, vaccination, quarantine, disinfection, etc.) | | | | | | |
| Identification and diagnostics of livestock diseases | | | | | | |
| Treatment of livestock diseases | | | | | | |
| Veterinarian first aid | | | | | | |
| Grazing and water reservoirs supervision | | | | | | |
| Veterinary supervision of animal slaughter | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results including keeping veterinary journal | | | | | | |
| Maintaining record of activities | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

1. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.10 Skills mapping agro equipment electrician

**Agroequipment Electrician Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Agricultural electro-machinery and equipment types and their exploitation rules and principles | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Fitting and installation of electronic equipment and machinery | | | | | | |
| Reading/understanding and calculating electrical circuit diagrams | | | | | | |
| Installation, diagnostics and operating and exploiting agricultural electrical machinery and equipment | | | | | | |
| Selection of electrical circuits and their adaptation to the requirements of the technological cycle | | | | | | |
| Other. Please specify: _____ | | | | | | |

| **General professional knowledge** | | | | | | |
|---|---|---|---|---|---|---|
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.11 Skills mapping agrologistics operator

**Agrologistics Operator Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Formation principles and objectives of the service market logistics system | | | | | | |
| Socio-economic principles, aims and objectives of the functioning of the agrologistic centers | | | | | | |
| Basic principles and methods of agricultural product procurement, production, distribution and transportation logistics | | | | | | |
| The essence, methods and means of processing logistics information | | | | | | |
| Product sales assessment criteria, modern methods and control systems | | | | | | |
| System models and planning methods of agricultural product transportation | | | | | | |
| Methods for assessing competitiveness of the agricultural | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| product transportation activities | | | | | | |
| Operational system of agricultural product storage and processing technologies | | | | | | |
| Practical methods of stock control and processing orders | | | | | | |
| Methods of systematizing procurement and supply-demand information and of creating database | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Participating in the research on agricultural product market demand, including selecting the target market | | | | | | |
| Creation and control of products with various name, assortment and volume based on the market research results | | | | | | |
| Creation and dissemination of product information in order to stimulate sales | | | | | | |
| Creating criteria for selecting potential suppliers, finding potential suppliers and review of their offers based on criteria developed in advance | | | | | | |
| Participating in organizing the functioning of the logistics subsystems (procurement, warehouses, stocks, production plants, transportation, information, sales) | | | | | | |
| Provision of coordinated interaction among the supply, production and sales | | | | | | |
| Selection of the technological schemes and logistical machines according to agrological cargo types and planning | | | | | | |
| Planning and managing warehousing | | | | | | |
| Controlling product and service quality | | | | | | |
| Collecting information about and elimination of the delays and flaws in the processes | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.12 Skills mapping mechanical engineering technician

**Mechanical Engineering Technician Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | How useful is it? | | | Do trainees have this skill? | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Theoretical principles of mechanical engineering | | | | | | |
| Materials used in mechanical engineering | | | | | | |
| Machine types and systems | | | | | | |
| Working knowledge of the machine and fitting equipment | | | | | | |
| Computer graphics, ability to read working schemes of the details, front, back and side views of machinery and grooves | | | | | | |
| Elaborating appropriate approaches to solving mechanical engineering problems | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Managing operations of the mechanical engineering production processes | | | | | | |
| Manufacture of details | | | | | | |
| Elaboration of technological processes | | | | | | |
| Determining cutting regimes and regulating time | | | | | | |
| Constructing, setting up, tuning and testing the machinery | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Determining working capacity and level of required repair work of the machinery and equipment | | | | | | |
| Design, set up, operation, diagnostics and repair of the special nodes, tools and equipment design, construction, management, diagnostics and repair | | | | | | |
| Operating machines and machine systems | | | | | | |
| Carrying out fitting works | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.13 Skills mapping refrigeration technician

**Refrigeration Technician Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Managerial skills | | | | | | |
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Theoretical principles of getting artificial cold | | | | | | |
| Principles of theoretical and practical operation and exploitation methods of the refrigeration machinery and equipment | | | | | | |
| General means of solving problems with refrigeration technologies and equipment | | | | | | |
| Organizational management methods of refrigeration enterprises | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Planning and implementing refrigeration machinery and equipment operation, exploitation and repair services | | | | | | |
| Identification of reasons for refrigeration machinery failure | | | | | | |
| Researching and studying the operating principles and exploitation methods of the principal elements of the household refrigeration machinery and protective equipment | | | | | | |
| Identification and analysis of and finding solutions to the problems with the refrigeration machinery | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Identification of refrigeration machinery and automatic directions | | | | | | |
| Independently studying and using operating equipment composition and functioning | | | | | | |
| Selection and utilization of alternative refrigerants | | | | | | |
| Mapping principal layouts/sketches of refrigeration equipment | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 4.14 Skills mapping tractor operator

**Tractor Operator Skills Mapping**

| | |
|---|---|
| Name | |
| Enterprise | |
| Position | |
| Tel No | |

1. Have you employed any professionals from VET centers?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

2. Please assess the usefulness of these skills for beekeeper (essential, useful, or not at all useful) and whether VET trainees\entry level employees on this position have these skills:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Personal characteristics** | | | | | | |
| Initiative | | | | | | |
| Sociable | | | | | | |
| Hard work (motivation) | | | | | | |
| Sense of responsibility | | | | | | |
| Physical stamina | | | | | | |
| Professional standards (punctual, reliable, team-worker) | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Working skills** | | | | | | |
| IT + computer skills | | | | | | |
| Managerial skills | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Communication skills | | | | | | |
| Specific professional skills | | | | | | |
| **Background** | | | | | | |
| Higher education | | | | | | |
| Professional education (VET education) | | | | | | |
| Professional experience | | | | | | |
| **Language skills** | | | | | | |
| Knowledge of Russian | | | | | | |
| Knowledge of English | | | | | | |
| Other, please specify: _____ | | | | | | |

3. Please assess on a scale the usefulness of each of these professional skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **Professional knowledge** | | | | | | |
| Mechanized technologies for agricultural crop cultivation, animal feed production and harvesting activities | | | | | | |
| General structure of basic tractor models | | | | | | |
| Types and rules of utilization of the tractor working devices and tools | | | | | | |
| Basic principles of composition, setting up and service of the tractor aggregates | | | | | | |
| Traffic and cargo transportation rules | | | | | | |
| Mechanized work technology (plowing, harrowing, cultivation, sowing, fertilizing the soil, protecting plants from pests and diseases, harvesting, mowing, etc.) | | | | | | |
| Characteristics of starting the tractor engine in summer and winter | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Professional skills** | | | | | | |
| Preparation of the tractor engine for startup | | | | | | |
| Driving the tractors (wheel and tracked), and self-propelled retractable undercarriage | | | | | | |
| Driving by fully following the traffic rules | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Connecting the tractor with the agricultural machinery | | | | | | |
| Implementing mechanized agricultural processes | | | | | | |
| Utilization of tractor equipment and tools for control and measurement | | | | | | |
| Providing technical assistance to the tractor aggregates according to the standard methodology | | | | | | |
| Analysis of and finding optimal ways for performance quality of the tractor aggregates, finding and eliminating operational flaws | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **General professional knowledge** | | | | | | |
| Regulative standards and norms related to the profession and labor relationships | | | | | | |
| Regulative norms of labor safety, fire prevention and ventilation | | | | | | |
| Norms and standards of sanitary-hygiene rules | | | | | | |
| First-aid rules | | | | | | |
| Other. Please specify: _____ | | | | | | |
| **Managerial knowledge and skills** | | | | | | |
| General principles of business management and business plan writing | | | | | | |
| Market research and analysis | | | | | | |
| General principles of accounting and financial management | | | | | | |
| General principles of distribution management | | | | | | |
| General principles of marketing and advertising | | | | | | |
| HR management, selection and supervision of qualified staff | | | | | | |
| General principles of product transportation and storage | | | | | | |
| Preparing and presenting oral and written reports on ongoing processes and results | | | | | | |
| Maintaining record of activities | | | | | | |
| Working on professional development | | | | | | |
| Acquiring new knowledge and updates in the field | | | | | | |
| Other. Please specify: _____ | | | | | | |

4. Please, list 3-5 most important skills for your agricultural business and assess on a scale the usefulness of each of these skills you require from your employee on the entry level:

| | **How useful is it?** | | | **Do trainees have this skill?** | | |
|---|---|---|---|---|---|---|
| | **Essential** | **Useful** | **Not at all useful** | **Yes** | **Partial** | **No** |
| **3 most important skills** | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## *5. School children survey questionnaire*

| | |
|---|---|
| Questionnaire # | |
| Interviewer | |
| Interviewer contact information | |
| City/village/settlement | |
| School | |
| Date | Day: Month: Year: |
| Time of the start of the interview | hh_____mm_____ |
| Time of the end of the interview | |
| Interview result | 1. Completed<br>2. Partially completed<br>3. Refuse to answer<br>4. Other |

Hello, I am _____. We are doing a survey for the EU VET project, implemented by PiN, to improve formal, non-formal and informal vocational education for the Agribusiness in Georgia. This survey is confidential and neither your name, nor any personal data will be available for public. We will only use the survey data to better understand the attitudes and informativeness of the final-year high school students about VET. This will allow the project to effectively help the development of the VET in Imereti and in Georgia. The survey will take up only 15 minutes of your time and your help will be much appreciated.

**Section A: Respondent's profile**

| | |
|---|---|
| 1. Gender | M / F |
| 2. Age | |

**Section B: Future plans**

3. **What are your plans after high school graduation?**

*To the interviewer: do not read to the respondent! Match their answers to the choices listed below.*

| | | |
|---|---|---|
| 1 | Continue education at university in Kutaisi | |
| 2 | Continue education at university in Tbilisi | |
| 3 | Continue education at university other than Kutaisi and Tbilisi. Please, specify: _____ | |
| 4 | Continue education at VET institution. Please, specify: _____ | |
| 5 | Find employment/work. Please, specify: _____ | |
| 6 | Start a business or join a family business. Please, specify:_____ | Skip to Q6 |
| 7 | I do not plan to continue education | Skip to Q6 |
| 8 | Other. Please, specify: _____ | |
| *-1* | *Don't know* | |
| *-2* | *Refuse to answer* | |

4. **Please, specify the field of your interest**:

| | |
|---|---|
| 1 | |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

5. **What are the main reasons for your career choice?**

*To the interviewer: do not read to the respondent! Match their answers to the choices listed below. Circle maximum 3 answers. Write "1" to the right of the respondent's most important reason.*

| | | |
|---|---|---|
| 1 | I just really want to do it | |
| 2 | I think it will pay me the most money | |
| 3 | I am confident that I will be able to find work | |
| 4 | It is a high status or cool job, or prestigious | |
| 5 | My parents decided for me | |
| 6 | It was an advice from a friend or a family member | |
| 7 | It's a family tradition | |
| 8 | The competition for related educational programs is low | |
| 9 | Other. Please, specify: _____ | |
| *-1* | *Don't know* | |
| *-2* | *Refuse to answer* | |

**Section C: Awareness about vocational education**

6. **Do you feel that you know about what vocational education is like and about the options of courses available in general?**

| | **VET in General** | **Options of courses** | |
|---|---|---|---|
| 1 | Yes | Yes | |
| 2 | No | No | Skip to the Q13 |
| *-1* | *Don't know* | *Don't know* | Skip to the Q13 |

| | | | |
|---|---|---|---|
| *-2* | *Refuse to answer* | *Refuse to answer* | Skip to the Q13 |

7. **Do you feel that you know about what vocational education is like and about the options of courses available in Imereti?**

| | **VET in General** | **Options of courses** | |
|---|---|---|---|
| 1 | Yes | Yes | |
| 2 | No | No | Skip to the Q10 |
| *-1* | *Don't know* | *Don't know* | Skip to the Q10 |
| *-2* | *Refuse to answer* | *Refuse to answer* | Skip to the Q10 |

8. **How did you first hear about vocational education centers in Imereti?**

*To the interviewer: do not read to the respondent!* Match their answers to the choices listed below. Circle maximum 2 answers.

| | |
|---|---|
| 1 | From high school teachers/administrators |
| 2 | From a friend who goes there |
| 3 | From a friend who does not go there |
| 4 | From VET providers. Please, specify: _____ |
| 5 | From parents |
| 6 | Other. Please, specify: _____ |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

9. **Which vocational education institutions in Imereti do you know about?**

*To the interviewer: do not read to the respondent!* Match their answers to the choices listed below. Circle all of the respondent's answers.

| | |
|---|---|
| 1 | Akaki Tsereteli State University (Kutaisi) |
| 2 | Iberia Community College (Kutaisi, Baghdati) |
| 3 | Kutaisi Medical School |
| 4 | Kutaisi Managers Professional College |
| 5 | Community College Intelekti (Kutaisi) |
| 6 | Community College Kavkasioni |
| 7 | Sio Medical School (Kutaisi) |
| 8 | Kutaisi Community College |
| 9 | Kutaisi Medical School |
| 10 | Profunite (in Chiatura) |
| 11 | Other. Please, specify: _____ |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

**Section D: Attitude towards vocational education**

10. **In general, how is your perception of vocational education?**

| | |
|---|---|
| 1 | Extremely positive |
| 2 | Positive |
| 3 | Neutral |
| 4 | Negative |

| | |
|---|---|
| 5 | Extremely negative |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

11. **Please, rate each of the following aspects of vocational education on a scale from 1 to 4, where "1" is the lowest and "4" is the highest:**

| | | | | | | *Don't know* | *Refuse to answer* |
|---|---|---|---|---|---|---|---|
| 1 | Prestige | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 2 | Educational programs | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 3 | Quality of education | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 4 | Practical trainings/experience | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 5 | Remuneration of professions taught at the VETs | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 6 | Availability of government scholarships | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 7 | Self-employment opportunities based on skills acquired at VETs | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 8 | Employment opportunities based on skills acquired at VETs | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 9 | Certificate | 1 | 2 | 3 | 4 | *-1* | *-2* |
| 10 | Other. Please, specify: _____ | 1 | 2 | 3 | 4 | *-1* | *-2* |

12. **If the VET system in Georgia were perfect, which VET program(s)/specialties would you apply to?**

(Maximum 3 answers)

| | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

**Section E. Family farming**

13. **Does your family own an agricultural land plot?**

| | | |
|---|---|---|
| 1 | Yes. Please specify the size of the land plot: _____ | |
| 2 | No | Skip to Q18 |
| *-1* | *Don't know* | Skip to Q18 |
| *-2* | *Refuse to answer* | Skip to Q18 |

14. **How often do you work on your family land plot (including seasonality)?**

| | |
|---|---|
| 1 | Everyday |
| 2 | Up to 5 days a week |
| 3 | Up to 3 days a week |
| 4 | Once a week |
| 5 | Never |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

15. **What do you grow/keep on your family land plot?**

*To the interviewer: circle all of the respondent's answers.*

| | |
|---|---|
| 1 | Vegetables (including potato) |
| 2 | Fruits (except grapes) |
| 3 | Grapes |
| 4 | Grains |
| 5 | Hazelnut |
| 6 | Herbs (greenhouse) |
| 7 | Bees |
| 8 | Livestock |
| 9 | Tea |
| 10 | Other. Please, specify: _____ |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

16. **Does your family process anything for sale?**

*To the interviewer: circle all of the respondent's answers.*

| | |
|---|---|
| 1 | Cheese, matsoni or other dairy products |
| 2 | Wine |
| 3 | Meat |
| 4 | Pickles/canned goods |
| 5 | Honey |
| 6 | Jam |
| 7 | Dried fruits |
| 8 | Eggs |
| 9 | Fries/fingerlings |
| 10 | Tea |
| 11 | Other. Please satisfy: _____ |
| 12 | No |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

17. **Is most of the food produced on your family land plot consumed by the family or sold for money?**

| | |
|---|---|
| 1 | Consumed by the family |
| 2 | Sold for money |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

18. **Would you say that your family has any interest investing in and/or growing their family farming business?**

| | |
|---|---|
| 1 | Yes |
| 2 | No |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

19. **Does any member of your household have an agricultural business, other than the land plot and food processing?**

| | |
|---|---|
| 1 | Yes. Please, specify what kind of business: _____ |
| 2 | No |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

**Section F: Employment**

20. **In your opinion, which sectors or professions have the most jobs in Imereti?** (Maximum 3 answers)

| | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

21. **Have you ever been employed:**

*To the interviewer:* define "employment" to the respondent. It involves any official or unofficial work done or services rendered (including internships) for someone else (including an enterprise, individual entrepreneur, own family and a neighbor), for monetary or payment-in-kind remuneration (including a certificate of employment) or for gaining professional experience.

*To the interviewer: circle all of the respondent's answers.*

| | |
|---|---|
| 1 | Yes, by another enterprise / individual entrepreneur |
| 2 | Yes, on a land/in a farm owned by your family |
| 3 | No |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

22. **How do you find information on job possibilities in your region?**

| | |
|---|---|
| 1 | I have not done it before |
| 2 | I ask people around me |
| 3 | I check job postings online |
| 4 | I go to the businesses and ask if they are hiring |

| | |
|---|---|
| 5 | I hear about job postings on local TV channels |
| 6 | I check job postings on the street/flyers |
| 7 | Other. Please, specify: _____ |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

23. **Are you currently interested in working in agriculture?**

| | | |
|---|---|---|
| 1 | Yes. Please, specify the sector/specialty:_____ | |
| 2 | No | Skip to Q28 |
| *-1* | *Don't know* | |
| *-2* | *Refuse to answer* | |

24. **In your opinion, how easy is it to find a job in agriculture in your region?**

| | |
|---|---|
| 1 | Very easy |
| 2 | Easy |
| 3 | Neither difficult, nor easy |
| 4 | Difficult |
| 5 | Very difficult |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

25. **Please, assess how interested would you be in working in any of the following agricultural sectors on a scale from 1 to 3, where "1" means "extremely interested", "2" – "somewhat interested" and "3" – not interested at all.**

| | | Extremely interested | Somewhat interested | Not interested at all | *Don't know* | *Refuse to answer* |
|---|---|---|---|---|---|---|
| 1 | Farming | 1 | 2 | 3 | *-1* | *-2* |
| 2 | Beekeeping / honey processing | 1 | 2 | 3 | *-1* | *-2* |
| 3 | Hazelnut processing | 1 | 2 | 3 | *-1* | *-2* |
| 4 | Fruit processing | 1 | 2 | 3 | *-1* | *-2* |
| 5 | Refrigeration technologies | 1 | 2 | 3 | *-1* | *-2* |
| 6 | Agro logistics | 1 | 2 | 3 | *-1* | *-2* |
| 7 | Irrigation systems | 1 | 2 | 3 | *-1* | *-2* |
| 8 | Agricultural equipment repairperson | 1 | 2 | 3 | *-1* | *-2* |
| 9 | Agricultural equipment operator | 1 | 2 | 3 | *-1* | *-2* |
| 10 | Electrician – climate control systems in farms | 1 | 2 | 3 | *-1* | *-2* |
| 11 | Agricultural business manager | 1 | 2 | 3 | *-1* | *-2* |
| 12 | Operating food production machines | 1 | 2 | 3 | *-1* | *-2* |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13 | Winemaking | 1 | 2 | 3 | *-1* | *-2* |
| 14 | Plant protection | 1 | 2 | 3 | *-1* | *-2* |
| 15 | Veterinary | 1 | 2 | 3 | *-1* | *-2* |
| 16 | Zootechnician | 1 | 2 | 3 | *-1* | *-2* |
| 17 | Chemical analysis of food products | 1 | 2 | 3 | *-1* | *-2* |
| 18 | Quality/standard assurance | 1 | 2 | 3 | *-1* | *-2* |
| 19 | Food production: pastry, flour, bran | 1 | 2 | 3 | *-1* | *-2* |
| 20 | Plant and/or animal disease prevention and treatment | 1 | 2 | 3 | *-1* | *-2* |

26. **Would you be interested in self-employment in the agricultural sector?**

| | |
|---|---|
| 1 | Yes |
| 2 | No |
| *-1* | *Don't know* |
| *-2* | *Refuse to answer* |

27. **Why*?***

*To the Interviewer: write down the response in detail.*

| |
|---|
| |

28. *To the interviewer: do not ask this question if the respondent answered YES to Q26!*

**If the agriculture system in Imereti was developed and there were jobs, would you be interested in working in agriculture?**

| | |
|---|---|
| 1 | Yes. Please, specify the sector/specialty: _____ |
| 2 | No |
| -1 | Don't know |
| -2 | Refuse to answer |

**Thank you for taking time to answer our questions, good luck!**

## *6. School children focus group guide*

Key questions for discussion:

1. Future plans
   - What are your plans for future? What do you want to study, where and why?
   - Where do you want to work afterwards?
2. Vet as the future profession
   - Have you ever thought about applying for VET? Why?
   - What about your peers? Do your classmates/relatives/neighbors applying for VET colleges? Where? Why?
3. Self-employability
   - Have you ever thought about self-employment? Why?
4. VET awareness and attitude
   - What is the general attitude in your class towards the VET?
5. Involvement in Agricultural activities/interest in agriculture
   - How about agriculture? How important is it in Imereti/Georgia?
   - What are the benefits and drawbacks of working in agriculture?
   - What kind of professions are there in agriculture?School children focus group guide

## *7. Small farmer survey questionnaire*

| | |
|---|---|
| Questionnaire # | |
| Interviewer | |
| Interviewer contact information | |

| | |
|---|---|
| Respondent contact information | |
| City/village/settlement | |
| Rayon | |
| Date | Day: Month: Year: |
| Time of the start of the interview | hh_____mm_____ |
| Time of the end of the interview | hh_____mm_____ |

Hello, I am _____. We are doing a survey for the EU VET project, implemented by PiN, to improve formal, non-formal and informal vocational education for the Agribusiness in Georgia. This survey is confidential and neither your name, nor any personal data will be available for public. We will only use the survey data to better understand the attitudes and informativeness of the final-year high school students about VET. This will allow the project to effectively help the development of the VET in Imereti and in Georgia. The survey will take up only 10-15 minutes of your time and your help will be much appreciated.

**Section A: Respondent's profile**

| | |
|---|---|
| **1.** Gender | 1. Female2. Male |
| 2. Age | |

3. In which agricultural field are you involved mostly?
*To the interviewer: do not read to the respondent!* Match their answers to the choices listed below. *Circle maximum 3 answers. Write "1" to the right of the respondent's most important agricultural activity.*

| | | |
|---|---|---|
| 1 | Vegetables and greens (please specify_____) | |
| 2 | Fruit(please specify_____) | |
| 3 | Grapes | |
| 4 | Hazelnut | |
| 5 | Crops such are beans, corn and etc. (please specify_____) | |
| 6 | Livestock (please specify_____) | |
| 7 | Poultry (please specify_____) | |
| 8 | Dairy | |
| 9 | Beekeeping | |
| 10 | Tea | |
| 11 | other(please specify_____) | |
| *-1* | *Don't know/Refuse to answer* | |

**Section B: Need for VET support**

4. From where do you get most information related to agriculture and farming?
*To the interviewer: do not read to the respondent!Circle maximum 3 answers. Write "1" to the right of the respondent's most important information source.*

| | | |
|---|---|---|
| 1 | Neighbor/friends/family | |
| 2 | TV (Please specify particular show_____) | |
| 3 | A local veterinarian | |

| | | |
|---|---|---|
| 4 | A local farm supply shop | |
| 5 | Agriculture Information Consultation Service center | |
| 6 | Non-governmental organization | |
| 7 | I look up information on the internet (please specify which online sources are you using mostly) | |
| 8 | other(please specify_____) | |
| -1 | *Don't know/Refuse to answer* | |

5. If you need a veterinarian, what do you do? If you know, can you remember if it state or private? Please assessif you are satisfied with services on a scale from 1 to 4, where "1" means "very dissatisfied" and "5" – "very satisfied".

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | There is a veterinarian in the village | a.State<br>b.Private<br>c.relative/friend | 1 | 2 | 3 | 4 |
| 2 | There is a veterinarian in the rayon | a.State<br>b.Private<br>c.relative/friend | 1 | 2 | 3 | 4 |
| 3 | I don't have information about the available veterinary service in my rayon | | | | | |
| 4 | I don't need to use the veterinaryservice | | | | | |
| -1 | *Don't know/Refuse to answer* | | | | | |

6. If you need agronomist, what do you do? If you know, can you remember if it state or private? Please assess if you are satisfied with services on a scale from 1 to 4, where "1" means "very dissatisfied" and "5" – "very satisfied".

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | There is an agronomist in the village | a.State<br>b.Private<br>c.relative/friend | 1 | 2 | 3 | 4 |
| 2 | There is an agronomist in the rayon | a.State<br>b.Private<br>c.relative/friend | 1 | 2 | 3 | 4 |
| 3 | I don't have information about the available agronomistin my rayon | | | | | |
| 4 | I don't need to use the agronomistservice | | | | | |
| -1 | *Don't know/Refuse to answer* | | | | | |

7. Expect veterinary and agronomy service, what kind of other specialist would be useful for your agricultural activity??

| |
|---|
| |

8. Of the following agricultural services, choose the two that would be most useful to you:
*<u>To the interviewer: do not read to the respondent</u>!Circle maximum 2 answers*

| | |
|---|---|
| 1 | accurate weather forecasts |
| 2 | daily information on market prices for your products, at nearby markets |

| | |
|---|---|
| 3 | short video trainings on the products you produce |
| 4 | better transport to get your products to nearby markets |
| 5 | cheap agriculture insurance |
| 6 | tailored advice from agricultural experts |
| 7 | other (Please specify_____) |
| *-1* | *Don't know/Refuse to answer* |

9. What do you find the most convenient way to receive agricultural news?
*To the interviewer:Circle maximum 3 answers. Write "1" to the right of the respondent's most important.*

| | | |
|---|---|---|
| 1 | Mobile Application | |
| 2 | Web-site | |
| 3 | Local Television | |
| 4 | SMS | |
| 5 | Facebook | |
| 6 | other (Please specify_____) | |
| -1 | *Don't know/Refuse to answer* | |

Section**C: professional education**

10. Do you or any member of your family have graduated from any VET college?

| | |
|---|---|
| 1 | Yes (Please specify _____) |
| 2 | No |
| -1 | *Don't know/Refuse to answer* |

11. Do you have any information about vocational education institutions in Imereti?

| | |
|---|---|
| 1 | Yes (Please specify the profession_____) |
| 2 | No |
| -1 | *Don't know/Refuse to answer* |

12. Do you have family member who is between 16-18 years old?

| | |
|---|---|
| 1 | Yes |
| 2 | No |
| -1 | *Don't know/Refuse to answer* |

13. Would you (or any member of your household) take a short-course at a VET center– on agriculture under ANY circumstances
*To the interviewer:*explain, in case of it will be short, free, well targeted.

| | |
|---|---|
| 1 | Yes (please specify in which field_____) |
| 2 | No |
| -1 | *Don't know/Refuse to answer* |

14. In case of your family members will be interested in to take courses at VET centers, could they do full time (over the period listed) or would it need to be part time? Please specify the duration of courses

| # | a) Full time | # | b) part time |
|---|---|---|---|
| 1 | A few days | 1 | A few days |
| 2 | A few weeks | 2 | A few weeks |
| 3 | A few months | 3 | A few months |
| 4 | One year and more | 4 | One year and more |
| 5 | *Don't know/Refuse to answer* | 5 | *Don't know/Refuse to answer* |

**Thank you for taking time to answer our questions, good luck!**

## *8. In-depth interview guide with cooperatives*

Key questions for the discussion:

1. Brief history of cooperatives
   - Main reasons for registering a cooperative
   - Main challenges
   - Perception of the cooperatives as the way to develop agriculture
2. Employment and main skills required
   - Employment recruitment strategy
   - Main skills required
   - Opportunity of training/experience of trainings for their employees
3. Availability of services
4. Quality of availability services
5. VET awareness
6. VET attitude
7. Partnership with VET institutions