

Corn yield sample survey is conducted in 2015 by the Ministry of Agriculture of Georgia, survey was conducted in 3 regions of Georgia that are the main producers of corn. In these regions there was taken some number of agricultural holdings by random sampling and some big holdings were selected by probability of 1. The main problem during working on survey was sampling procedure, because of not having complete frame for sampling.

We have used database of beneficiaries that are receiving subsidies from government. Subsidies was given for holdings which has arable land less than 5 ha and subsidies was determined for cultivation of land. In 2014 by Agricultural Projects Management Agency that is under the Ministry of Agriculture was conducted survey, the goal of the survey was to estimate what part of cultivated land was used for sown area and which crops were sowed. From survey results we had got list of holdings who had sown area of corn in 2014. Mentioned list was our frame for sampling in corn yield survey. But of course list of holdings was not complete and we could not give them weights for generalization, we have taken ranges of corn sown areas and in these ranges we have made simple averages of results from selected holdings, but holdings were selected by accumulative summing of their corn areas.

Plans for future is to do survey for other crops and get sampling frames.

Because of confidentiality Geostat cannot give to the ministry of Agriculture frame for sampling or sample selected for own survey, what can we do for other crops and for corn also in next years.

The 2015 sampling frame contained 816,285 holdings, an increase of 463 from the 2014 frame. The methodology for selecting the sample remained the same, including the same strata definitions for villages and the same strata definitions for households. survey Questionnaire covers crop survey, livestock, Horticulture and Aquaculture survey.

For determination of extreme operators (EOs) records, which are records that are included in the survey with certainty, the same criteria were used as for the 2014 survey. With the updated frame, 228 EOs from 2014 were also identified as EOs in 2015. The other 150 EOs from 2014 were no longer flagged as EOs. Of these, 47 were determined to be out of business and had been removed from the frame. For 2014, 114 new EOs were identified based on the criteria. In addition, Geostat provided a list of 13 additional operations that should be considered Eos (mostly greenhouses). The final EO count was 355. These holdings were excluded from the population before the rest of the sample was selected.

The non-EO sample for 2015 continues to use a two stage sample design. The first stage is a stratified random sample of villages within a region. The second stage is a stratified random sample of holdings within a village. Each region had its own unique village strata and holding strata criteria, based on targeted commodities of importance in each region. Several of these criteria were updated previously (2013) including the removal of tea criteria, and an increased focus on citrus and pigs. Last year (2014) region 29 was modified to focus on vineyards and protect against possible issues with pastures. This year (2015) no further changes were made. As in previous years, ten specific villages were given a probability of selection equal to 1 to maintain consistency between the sum of the sample weights and the population, and to stabilize the sum of the weights across years. The ten villages were 38251100, 26331100, 38321100, 47311100, 29301100, 26291100, 44261100, 23251100, 26391100, and 32295731. In addition to these ten, 99 other villages across Georgia were selected with a probability equal to 1 due to large amounts of agriculture in the village. A table documenting how many villages per region is included in the population and sample analysis spreadsheet provided to Geostat, and the criteria used are included later in this document.

After all review and adjustments were made to the population and sample methodology, there were 10 regions and 3,834 villages in the sampling frame. There were 355 EOs and 815,930 non-EO holdings. There were 679 villages selected for the sample, 170 have only EO holdings. There were 4,859 non-EO holdings selected, giving a total sample size of 5,214 for the 2015 survey. Additional information about the population and sample follow this page.

### Targeted Commodities by Region

Region	Region Name	Targeted Commodities
15	Adjara	Citrus
23	Guria	Citrus
26	Imereti	Goats, Melon, Vegetables, Vineyards, Pigs
29	Kakheti	Melons, Vegetables, Pigs, Vineyards, Wheat
32	Mtskheta-Mtianeti	Sheep, Bovines
35	Racha-Lechkhumi	Orchards
38	Samegrelo-Zemo Svaneti	Buffalo, Pigs
41	Samtckhe-Jevakheti	Potatoes
44	Kvemo Kartli	Melons, Vegetables, Potato, Sheep
47	Shida Kartli	Wheat, Orchards, Pigs

### Population and Sample Size by Region

Region	Villages in Population	Villages in Survey INcluding EOs	Holdings in Population INcluding EOs	Holdings In Survey INcluding EOs	Holdings In Survey EXcluding EOs	EOs in Survey
15	341	42	51,619	323	317	6
23	232	42	43,251	313	298	15
26	600	96	169,352	790	753	37
29	302	110	127,140	962	824	138
32	550	68	51,230	507	481	26
35	255	35	23,526	232	230	2
38	505	77	110,193	554	527	27
41	295	55	50,486	385	367	18
44	374	91	105,626	659	592	67
47	380	63	83,862	489	470	19
Total	3,834	679	816,285	5,214	4,859	355

## Sample File Variables

### ID Info

Household_id	12 digit holding ID
Village_id	Original land location ID
Newvil_id	Modified land location ID for records not in a village
Vil_holdings	Number of holdings in a village
EO	Extreme operator (EO) if EO = 1

### Village Sample Info

Vil_strata	Village strata values 90, 80, 70, 60
Vil_population	Village stratum population
Vil_samplesize	Village stratum sample size
Vil_weight	Sampling weight for villages= population / sample size

### Holding Sample Info

HH_strata	Holding strata values 9, 8, and 7
HH_population	Holding stratum population
HH_samplesize	Holding stratum sample size
HH_weight	Sampling weight for holdings = population / sample size

# Village Stratum Definitions

```
if region = 15 then do;
  if livestock>=1400 or perm_crops>=200 or arable_land>=150 or citrus >=130 then vil_strata = 90;
  else if livestock>=1400 or perm_crops>=70 or arable_land>=100 or citrus >=70 then vil_strata = 80;
  else if livestock>=700 or perm_crops>=40 or arable_land>=50 or citrus >=40 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 23 then do;
  if livestock>=1900 or perm_crops>=200 or arable_land>=400 or citrus >=60 then vil_strata = 90;
  else if livestock>=1000 or perm_crops>=100 or arable_land>=150 or citrus >=20 then vil_strata = 80;
  else if livestock>=400 or perm_crops>=70 or arable_land>=100 or citrus >=10 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 26 then do;
  if livestock>=3000 or perm_crops>=200 or arable_land>=1500 or goats >=248 or melons>=200 or vegetables>=300 or pigs>=1000 then
vil_strata = 90;
  else if livestock>=1000 or perm_crops>=150 or arable_land>=500 or goats >=150 or melons>=10 or vegetables>=50 or pigs>=500 then
vil_strata = 80;
  else if livestock>=500 or perm_crops>=50 or arable_land>=200 or melons>=2 or vegetables>=20 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 29 then do;
  if livestock>=12000 or perm_crops>=700 or arable_land>=4000 or vegetables>=120 or melons>=80 or pigs>=1000 then vil_strata = 90;
  else if livestock>=5000 or perm_crops>=400 or arable_land>=1000 or vegetables>=40 or melons>=40 or pigs>=500 then vil_strata = 80;
  else if livestock>=1000 or perm_crops>=200 or arable_land>=500 or vegetables>=20 or melons>=10 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 32 then do;
  if livestock>=2000 or perm_crops>=100 or arable_land>=1000 or bovines>=1000 or sheep>=1000 then vil_strata = 90;
  else if livestock>=1000 or perm_crops>=50 or arable_land>=300 or bovines>=400 or sheep>=500 then vil_strata = 80;
  else if livestock>=300 or perm_crops>=10 or arable_land>=70 or bovines>=150 or sheep>=100 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 35 then do;
  if livestock>=1000 or perm_crops>=50 or arable_land>=100 then vil_strata = 90;
  else if livestock>=500 or perm_crops>=20 or arable_land>=50 then vil_strata = 80;
  else if livestock>=200 or perm_crops>=5 or arable_land>=25 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 38 then do;
  if livestock>=3000 or perm_crops>=400 or arable_land>=1000 or buffaloes >=500 or pigs>=1500 then vil_strata = 90;
  else if livestock>=2000 or perm_crops>=300 or arable_land>=400 or pigs>=700 then vil_strata = 80;
  else if livestock>=800 or perm_crops>=100 or arable_land>=200 or pigs>=300 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 41 then do;
  if livestock>=9000 or perm_crops>=100 or arable_land>=1000 or potato>=200 then vil_strata = 90;
  else if livestock>=1000 or perm_crops>=50 or arable_land>=500 or potato>=100 then vil_strata = 80;
  else if livestock>=700 or perm_crops>=20 or arable_land>=200 or potato>=50 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 44 then do;
  if livestock>=10000 or perm_crops>=300 or arable_land>=1800 or vegetables>=300 or melons>=100 or sheep>=4000 then vil_strata = 90;
  else if livestock>=4000 or perm_crops>=100 or arable_land>=800 or vegetables>=100 or melons>=10 or potato >=100 then vil_strata = 80;
  else if livestock>=2000 or perm_crops>=20 or arable_land>=300 or vegetables>=20 or melons>=2 then vil_strata = 70;
  else vil_strata = 60;
end;
if region = 47 then do;
  if livestock>=3000 or perm_crops>=400 or arable_land>=1000 or wheat>=200 /*new in Nov2012:*/ or pigs>=2000 then vil_strata = 90;
  else if livestock>=1000 or perm_crops>=200 or arable_land>=500 or wheat>=150 /*new in Nov2012:*/ or pigs>=500 then vil_strata = 80;
  else if livestock>=400 or perm_crops>=100 or arable_land>=200 or wheat>=60 then vil_strata = 70;
  else vil_strata = 60;
end;
```

# Holding Stratum Definitions

```
if region = 15 then do;
  if livestock>=20 or perm_crops>=0.75 or arable_land>=1 or citrus>=0.75 or pastures>250 then hh_strata = 9;
  else if livestock>=5 or perm_crops>=.25 or arable_land>=.5 or citrus>=0.25 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 23 then do;
  if citrus>=0.6 or pastures>250 then hh_strata = 9;
  else if livestock>=5 or perm_crops>=2 or arable_land>=1 or citrus>=0.4 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 26 then do;
  if livestock>=30 or perm_crops>=2 or arable_land>=5 or goats>=10 or melons>=1 or vegetables>=2 or vineyards >=.75 or pastures>250 then
  hh_strata = 9;
  else if livestock>=5 or perm_crops>=1 or arable_land>=1 or melons>.1 or vegetables>=1 or vineyards >=.5 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 29 then do; /*2014 added wheat and vineyards and changed pastures (outliers)*/
  if livestock>=30 or perm_crops>=10 or arable_land>=20 or vegetables>=2 or melons>=2 or pastures>100 or
  wheat > 25 or vineyards > 5 then hh_strata = 9;
  else if livestock>=10 or perm_crops>=1 or arable_land>=2 or vegetables>=1 or melons>=1 or
  wheat > 5 or vineyards > 2 or pastures > 10 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 32 then do;
  if livestock>=100 or perm_crops>=5 or arable_land>=6 or bovines >=11 or sheep>=25 or pastures>250 then hh_strata = 9;
  else if livestock>=10 or perm_crops>=1 or arable_land>=1 or bovines >=4 or sheep>=1 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 35 then do;
  if livestock>=30 or perm_crops>=1 or arable_land>=2 or orchards>=.25 or pastures>250 then hh_strata = 9;
  else if livestock>=10 or perm_crops>=.6 or arable_land>=1 or orchards>=.1 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 38 then do;
  if livestock>=50 or perm_crops>=3 or arable_land>=3 /* or buffaloes>=10 or pastures>250 then hh_strata = 9;
  else if livestock>=10 or perm_crops>=0.5 or arable_land>=1 or tea>0 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 41 then do;
  if livestock>=50 or perm_crops>=2 or arable_land>=10 or potato>=1 or pastures>250 then hh_strata = 9;
  else if livestock>=10 or perm_crops>=.5 or arable_land>=2 or potato>=.5 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 44 then do;
  if livestock>=100 or perm_crops>=15 or arable_land>=10 or vegetables>=5 or melons>=2 or pastures>250 then hh_strata = 9;
  else if livestock>=20 or perm_crops>=.75 or arable_land>=1.5 or vegetables>=.75 or melons>=.75 or potato>=1 then hh_strata = 8;
  else hh_strata = 7;
end;
if region = 47 then do;
  if livestock>=10 or perm_crops>=2 or arable_land>=4 or wheat>=2 or pastures>250 then hh_strata = 9;
  else if livestock>=5 or perm_crops>=1 or arable_land>=1 or wheat>=1 or orchards>=.8 then hh_strata = 8;
  else hh_strata = 7;
end;
```