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## SWITZERLAND - Census of Agriculture 2010 – Explanatory notes

### 1. Historical Outline

Switzerland has a yearly census for the main agricultural topics like farmland, livestock and labour force. The main data source is the declaration for direct payments for farmers. Swiss Federal Statistical Office (FSO) carried out the 2010 farm structure surveys (FSS 2010) according to the European Union regulations and national legal acts.

### 2. Legal Basis and Organization

The main national legal acts were as follows:

- SR, Federal Statistics Act (BStatG) of 9 October 1992 with Regulations
- SR, Federal Law of 29 April 1998 on Agriculture (Agriculture Act – LWG)
- SR, Federal Act on Data Protection (DPA) of 19 June 1992
- SR, Regulation of 7 December 1998 on agricultural terms and the approval of types of operation/business forms (Regulation on agricultural terms, LBV)
- SR, Regulation of 7 December 1998 on the collection and processing of agricultural data (agricultural data regulation)
- SR, Regulation of 7 December 1998 on the evaluation of sustainability in agriculture

(SR = Swiss law)

The national legislation deals with the scope and coverage, frequency of the census and time reference, responsibility for the census, administrative and financial provisions, obligations of respondents with respect to the census, identification, protection and obligations of enumerators, right of access to administrative data, confidentiality.

In accordance with the law on data protection of Switzerland, all individual data on each person and each farm are confidential. Any person who is working with the data it is bound to respect that confidentiality.

### 3. Reference Period or Date

Reference date:

4 May 2010 for Crop areas, livestock data. Organic farming, general information on labour force

Reference periods are:

October 2010 for: detailed information on labour force, information on the holding manager; suppliers of agricultural services; machinery and equipment; stall/stables systems/facilities.

Calendar year 2010 for : Other gainful activities (Diversification); Renewable energy; Irrigation; Livestock grazing; Farm manure.

### 4. Enumeration Period

For the Farm structure survey data the farmer's declarations for direct payments are due in May 2010. The survey documents for farmers not receiving direct payments were sent out by post end of April 2010. Deadline for responding - end of May 2010. The documents for the sample supplementary survey on Agricultural production methods (SAPM) and detailed information on labour force were sent in October 2010 and the information was due by end October 2010.

### 5. Definition of the Statistical Unit

Switzerland followed the EC Regulation 1166/2008 which defines the statistical unit as an agricultural holding. „Agricultural holding“ or „holding“ means a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No 1166/2008 within the economic territory of the European Union, either as its primary or secondary activity.

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EU regulations require holdings to meet at least one of the following thresholds of size:

- one hectare of utilized agricultural area;
- 1.0 ha of permanent outdoor crops;
- 0.5 ha of outdoor vegetable or strawberry cultivation, or tobacco or hops or cotton;
- 0.1 ha of crops under glass or other accessible protective cover;
- or ten cattle, 50 pigs or ten breeding sows, 20 sheep, 20 goats, 1,000 poultry.

The utilized agricultural area threshold could be above 1 ha (up to 5 ha) in some countries provided that the Census covers at least 98% of the utilized agricultural area and 98 % of livestock (calculated in livestock units).

In line with Regulation (EC) No 1166/2008, Switzerland applied the following definition: Census includes agricultural holdings that reach one of the following thresholds:

- 1 hectare utilized agricultural area (UAA);
- 0.3 ha of specialised crops;
- 0.1 ha of greenhouses (high/low glass or foil);
- Livestock holdings with at least 8 breeding sows or 80 pigs, or 300 head of poultry of any type.

## **6. Geographic Coverage**

Covered the entire country

## **7. Exclusions and Cut-Off Thresholds**

None noted other than those stated in the national definition.

## **8. Methodology**

### ***FAO Modular Approach***

No

### ***Frame***

The population of the Agricultural Census 2010 essentially comprised the holdings receiving subsidies (direct payments) – about 58 000 holdings, and additional 1000 holdings not receiving subsidies (mainly horticultural holdings) The list is continuously updated by holdings' subsidies' declarations and other administrative sources.

### ***Complete or Sample Enumeration Methods***

The 2010 Farm Structure Survey 2010 was conducted as a census (enumeration of all agricultural holdings), the 2010 Survey on Agricultural Production Methods was a sample survey.

### ***Sample Design***

The 2010 Farm Structure Survey 2010 was conducted as a census (enumeration of all agricultural holdings), the 2010 Survey on Agricultural Production Methods was a sample survey. A sample with 26 strata was defined. In cantons with fewer than 500 holdings all units have been included in the sample.

Sample Selection:

- Sample size was elaborated based on Neyman allocation and a precision target of CV = 5 % on the NUTS 3 level
- Sampling design and estimation method: The units have been chosen by stratified simple random sampling
- Sample selection which performed in SAS (PROC surveyselect).
- Stratification: Primary strata: NUTS 3; Constructed secondary strata on the basis of Economic size and the utilised agricultural area,
- In general the sampling ratio was set to 100 % for NUTS 3 having less than 500 units and for strata with the biggest units.

### ***Collection Method***

The 2010 Agriculture Census data were collected using paper and Internet based questionnaires. Data on bovine animals was taken directly from an administrative database. Paper questionnaires were sent by post.

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### **Questionnaire(s)**

EU Regulations require information on holding location and geo-coordinates, legal status, ownership and tenancy, land use and crops grown, irrigation, livestock, organic farming, machinery (mandatory in 2013 FSS), renewable energy installations, other gainful activities, socio-economic circumstances (full and part-time farming), labour force (family, non-family, contractors), agricultural and vocational training of the manager, inclusion in rural development support programmes, soil tillage methods, crop rotation, and erosion protection, livestock keeping places and keeping methods, animal grazing, manure application and manure storage and treatment facilities, maintenance and installation of landscape features.

Additional information was collected on machinery and equipment, holdings providing agricultural services, and stall/stable facilities/systems (needed for agro-environmental indicators). More detailed information was asked about the labour force (with a supplementary sample survey).

Different questionnaires/administrative forms were used for different groups of farms.

Direct payment declarations were the main source for FSS (census). In accordance with the Agricultural Direct Payments Regulation almost 98.5 % of the farms (around 58 0000) provide declarations with annual data for the information system of agricultural payments and statistics. The cantons (agricultural offices) are responsible for the annual survey of farmers. This is done by means of paper questionnaires or online applications. The cantons provide the Federal Office for Agriculture with the data received and then it is forwarded to the BFS. This takes 6 to 10 months after the reference date (2-5 May).

The TVD administrative data for animals (bovine): Since 2009, the cattle stock has not been surveyed by means of direct payments (DP) declarations, but by means of a database on animal movements (TVD) set up for this purpose. The TVD is a result of the mad cow disease problem. Moreover, from 2011, all horses are to be reported as well. It should be noted that the cattle categories in the TVD are not entirely the same as in previous surveys. It particularly concerns the distinction between animals for culling and breeding, as well as the dairy cows split into commercial and non-commercial milk production and suckling cows. The TVD lists all the animals from birth until slaughter, and also makes the updates in cases of changing owners. The stocks are taken and evaluated by BFS every year, including for the FSS.

Questionnaire for holdings not receiving direct payments: Almost 1000 holdings (1.5%) in Switzerland do not receive direct payments. Many of them are horticultural holdings. These holdings received the questionnaire of BFS by post.

Large questionnaire for the sample survey of SAPM and labour force was used in addition to previous forms for the holdings in the sample.

### **Controls to Minimize Non-Sampling Errors**

Measures were taken to increase the response rate:

- 3 x written reminders
- Telephone reminders
- Priority was given to strata with low response rates:
  - Target: Achieving net sample sizes of different strata calculated during the sampling design stage (Neyman allocation) to obtain the desired cv-level. For take-all strata (small NUTS3/large units with regard to number of pigs or number of bovines) this is equivalent to a 100 % response-rate
- Contacting respondents who have only partly completed the questionnaires
- Training staff in handling difficult respondents
- Hotline from 7.00-20.00 p.m. in three languages (D, F,I)
- Web page

### **Innovative Methodologies**

Internet based questionnaires were used. Individual characteristics were obtained from existing administrative data (direct payment declarations), when available.

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## 9. Data Entry, Edits and Imputations, Estimation and Tabulation

As the data collection process achieved rather high response, the risk of an important bias coming from non-response can be considered as low. The risk of bias is further reduced by using powerful auxiliary information at the estimation stage.

The characteristics collected as primary statistics during the Farm Structure Survey were subjected to plausibility check at the micro record level. The online questionnaire incorporates checks such as on maximum values and other elements of control. Paper questionnaires were checked visually before scanning in order to correct the text and illegible figures

Missing data was calculated on the basis of information from other holdings of similar type, in some cases it was estimated or provided from other sources.

## 10. Data Dissemination and Use

Data are published on the website:

<http://www.bfs.admin.ch/bfs/portal/fr/index/themen/07/03/blank/data/01/01.html>

## 11. Data Sources

[http://www.bfs.admin.ch/bfs/portal/fr/index/infothek/erhebungen\\_quellen/blank/blank/bzs1z/01.html](http://www.bfs.admin.ch/bfs/portal/fr/index/infothek/erhebungen_quellen/blank/blank/bzs1z/01.html)

## 12. Census Data Quality.

For quality control, priority was given to direct contact with the holdings. But to avoid a heavy workload, only farmers who have not completed an entire chapter of their questionnaire were called by telephone to complete the missing information. At the same time, holdings were also requested to confirm or correct not coherent data on the basis of logical, historical or domain related tests/checks

## 13. Contact

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### **Website**

Swiss statistics: <http://www.bfs.admin.ch/bfs/portal/en/index.html>

<http://www.bfs.admin.ch/bfs/portal/fr/index/themen/07/03/blank/data/01/01.html>