



# Actualités OFS BFS Aktuell FSO News



## 7 Agriculture and forestry

Neuchâtel, 05.2012

## A look at the primary economy in Switzerland

### ... and focus on the "Productive assets in agriculture"

#### Summary

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## News on the primary economy in Switzerland

### Saturated agricultural markets and strong Swiss franc

According to initial estimates, in 2010 the Swiss primary sector realised an output of more than CHF 14 billion and generated almost CHF 6 billion in gross value added (GVA) (see table T1), i.e. 1.1% of the total gross value added of the Swiss economy.

Agriculture plays a very important role, having created more than 93% of the primary sector GVA, 6.5% of which came from forestry and 0.5% from fishing and fish farming.

The GVA of the primary sector declined by 2.5% at current prices compared with 2009. The total production volume remained stable. In contrast, the prices of agricultural products, particularly milk and pork, came under pressure due to the saturation of the agricultural markets.

In forestry, the decline in output observed since 2008 was halted. The contraction of wood production was caused by the strong franc in particular. While the exchange rate had a negative effect on exports, it increased the competitiveness of timber logs imported into the domestic market, where demand remained strong due to the growth of the construction industry.

Production costs resulting from intermediate consumption, depreciation and taxes fell by 1.5% between 2009 and 2010 (at current prices), particularly due to the decline in feed and fertilizer prices. Production subsidies – mainly composed of direct payments by the Confederation to agricultural farms, increased by 2.9%.

Compared with the previous year, the income generated in 2010 by the Swiss primary sector to pay for the production factors of labour, capital and land remained stable.

### T1 From output to income 2010

Accounting sequence for the Swiss primary sector (agriculture, forestry, fishing and fish farming)	2010*, at current prices, in CHF million	Variations 2009–2010* at current prices, as %	Variations 2009–2010* at previous year's prices, as %
<b>+ Output**</b>	14 267	-1.7%	0.0%
– Intermediate consumption	8 416	-1.2%	1.2%
<b>= Gross value added (GVA)</b>	<b>5 850</b>	<b>-2.5%</b>	<b>-1.6%</b>
– Fixed capital consumption	2 579	-2.3%	-1.7%
<b>= Net value added</b>	<b>3 271</b>	<b>-2.7%</b>	<b>-1.6%</b>
– Other taxes on production	205	0.2%	...
+ Other subsidies on production	3 080	2.9%	...
<b>= Factor income</b>	<b>6 146</b>	<b>-0.1%</b>	<b>...</b>
– Compensation of employees	2 720	2.1%	...
+ Interest and rents, receivable	473	4.0%	...
– Interest and rents, payable	42	-0.7%	...
<b>= Net entrepreneurial income</b>	<b>2 995</b>	<b>-2.5%</b>	<b>...</b>

\* 2009: provisional, 2010: estimate

\*\* At basic prices: includes the subsidies on products minus the taxes on products

## Focus on the “productive assets in agriculture”

### No agricultural production without capital stock

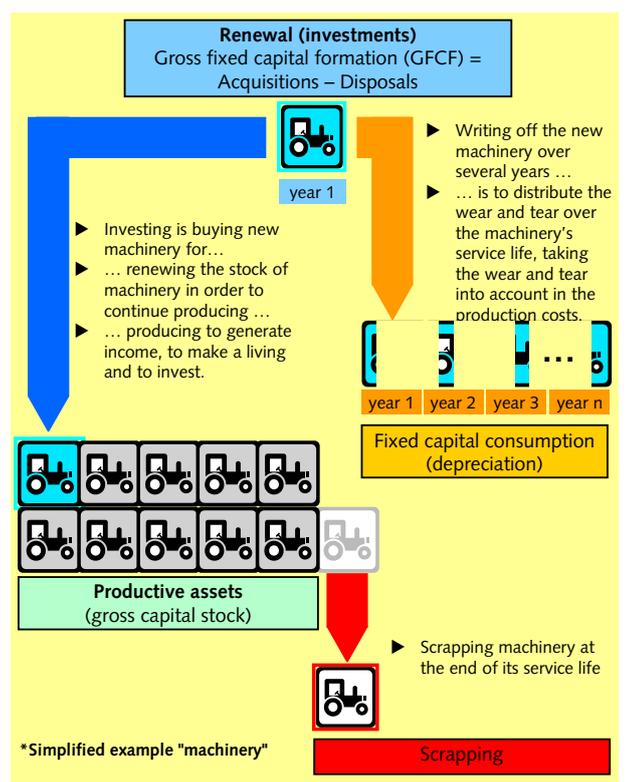
To produce milk, dairy cows are needed. To keep cows, stables are needed. To produce fruit, orchards are needed. To grow cereals, farmland is needed. To till the land, ploughs are needed ... All agricultural production is therefore based on productive assets. Broadly speaking, the production process consumes or utilises different types of inputs:

- human labour supplied by agricultural units,
- goods and services for intermediate consumption, i.e. inputs that undergo a transformation in their character and/or that disappear during a production cycle (seed, fertilizer, feed, energy, packaging, services, etc.)
- and **the productive assets** of agricultural units, consisting of fixed assets that are subject to wear and tear but do not undergo a transformation in their character, do not disappear during the production process and are used for several production processes.

Productive assets have to be regularly renewed to ensure the sustainability of production cycles (Figure F1). The political-economic framework, technical progress and structural change have an influence on the rate and composition of renewal. This renewal is called “gross fixed capital formation (GFCF)”.

The Economic Accounts for Agriculture (EAA) make it possible to assess on an annual basis the status and evolution of productive assets in agriculture (cf. boxes), through investments (gross fixed capital formation), wear and tear (depreciation) and the scrapping of assets.

### F1 From renewal to capital stock\*



### The capital stock reflects the types of agriculture

Swiss agriculture is heterogeneous and comprises a wide variety of agricultural activities (page 4, agriculture in the cantons). The range of assets that make up its productive assets is a reflection of this economic and regional diversity. In 2010, the value at renewal prices of the productive assets of Swiss agriculture exceeded CHF 52 billion (excluding land, cf. box “What is not measured by the accounts”).

In 2010, rural buildings (excluding residential dwellings) represented 58% of the value of the capital stock of agriculture (Graph G1). Because pastureland predominates in Switzerland due to climatic factors and the influence of mountainous terrain, agriculture is strongly oriented towards livestock and dairy production, which requires stables and roughage storage capacities.

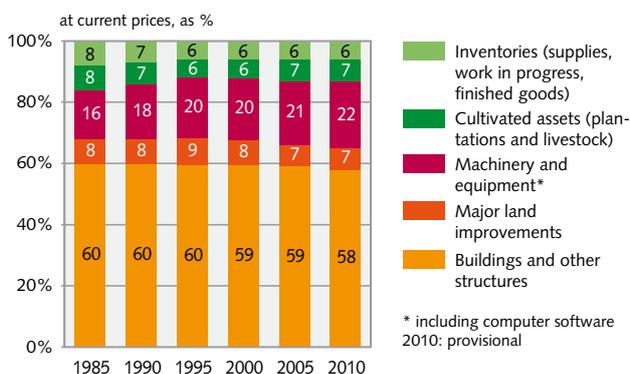
The share of land improvements in the capital stock of agriculture amounted to 7% and included land drainage and the reorganisation of land. These assets played a key role in increasing yields and allowing agricultural machinery improved accessibility to fields.

With 22% share in agriculture’s capital stock in 2010, mechanisation has grown in importance in recent years; at the same time, computer software (0.2% of productive assets) has begun to be used in various areas from feed management to accounting.

The share of cultivated assets (fruit orchards, vineyards, livestock) has decreased since the late 1980s, reaching 7% of the capital stock in 2010. This decline was mainly attributable to lower prices for livestock.

### Composition of productive assets

G 1



### Principles and methods

The productive assets of Swiss agriculture (gross capital stock) is mainly assessed with the Perpetual-Inventory-Method (PIM), which consists in cumulating over a very long period the annual investments by category of fixed assets (buildings, major land improvements, equipments, plantations), deducting scrapped assets. By taking into account the price evolution and the useful lifetime (or mortality) of each asset category over time, it is possible to compile the asset value. The value of cultivated assets of capital livestock (such as breeding or dairy livestock: cows, sows, etc.) and the value of work in progress on cultivated assets (livestock for fattening) are based on livestock numbers and prices. Lastly, the inventories of work in progress on crops (wine) and those of finished products (fruit, cereals, etc.) and supplies (hay) are evaluated during the compilation of the output value of agricultural production.

## Changing capital stock

The vast majority of farms are independent and family-owned businesses. Although Swiss agriculture has been characterised by household farming for centuries, farming techniques and technologies have changed in recent decades. Between 1985 and 2010, that is to say in a single generation, Swiss agriculture experienced far-reaching changes.

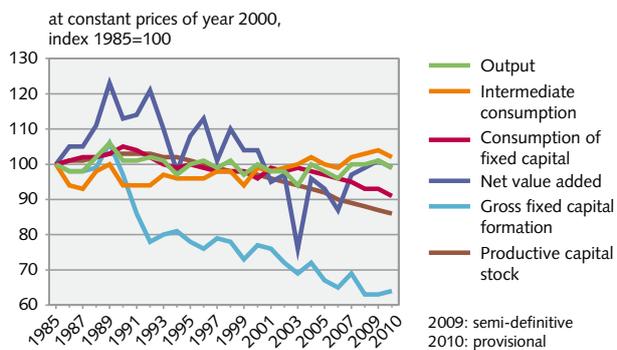
The early 1990s marked the end of a period of very strong growth in agricultural production, whose volume had almost doubled since end of World War II. The introduction of direct payments and the partial disengagement of the state from agricultural markets drove down agricultural product prices by 21% between 1990 and 1998. Generalised and ecological direct payments were introduced in 1999. Since then, agricultural prices have been marked by a certain volatility. The output volume (Graph G2) was influenced by a rapid succession of events, including a drought in 2003, an international shortage of raw materials (2008), the dismantling of the milk quota system and the economic crisis (2009), as well as the strength of Swiss franc (2010–2011).

In the past 25 years, agriculture has continued to undergo a structural change, marked by a falling number of farms and jobs in agriculture (Graph G3). Since the late 1980s, production processes have been streamlined even further, involving less work provided by farms and more materials, energy and specialised services acquired upstream (intermediate consumption, graph G2).

Gross fixed capital formation amounted to CHF 1.6 billion in 2010, i.e. a decline of a third compared with 1985, without taking account of inflation.

### From production to capital stock: key evolutions

G 2



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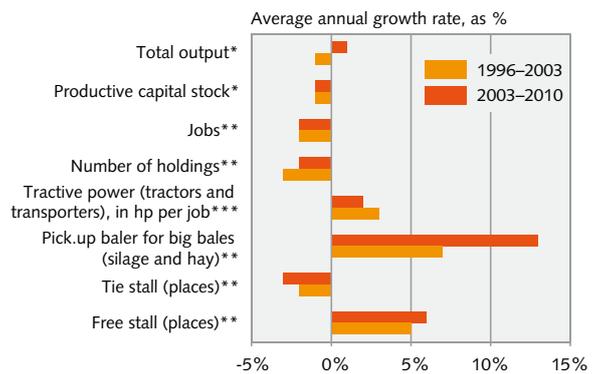
#### What is not measured by the accounts

The economic and satellite accounts for the primary sector provide information about key elements of accumulation and balance sheet (capital stock) accounts, without balancing those accounts, consequently not showing net lending or net borrowing, nor the net worth of the capital stock of the primary sector. In particular, the accounts for the primary sector do not inform about financial assets or debts (in variation or in balance), nor do they give a monetary value to the agricultural and forestry land (with the exception of major land improvements as reorganisation of land, drainage and protection against avalanches) or non-cultivated biological resources. Furthermore, the accounts do not assess the evolution and the stocks of "off-market" assets, such as biodiversity, services of agricultural and forestry ecosystems, soil fertility, groundwater ... nor do they give a monetary value to natural inputs such as rainwater or sunshine.

Indeed, ethological needs and search for less work-intensive processes have brought about changes in the composition of the renewal of productive assets (Graph G4). Gross fixed capital formation in rural buildings has declined sharply since 1990. There has been a trend toward more efficient techniques involving less expensive infrastructures. Two striking developments illustrate this trend: on the one hand the increase in loose housing for cattle (free stalls account for 59% of total places in 2010) and on the other hand the increasingly widespread use of large bales for storage of hay and silage (Graph G3).

### Changes in the productive: key elements

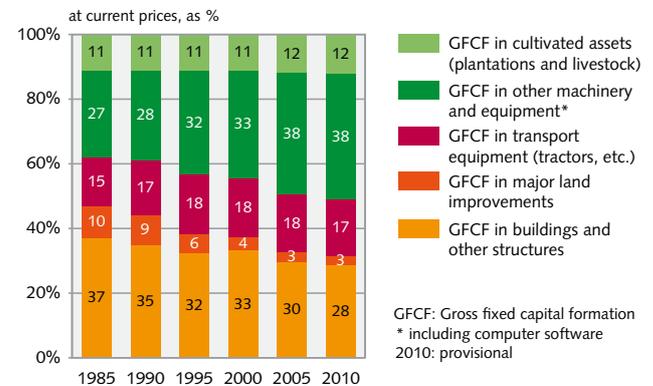
G 3



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### Composition of renewal of capital stock

G 4



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Equipment acquisitions (machinery and transport equipment) showed an inverse trend from building acquisitions. The share of equipment in total gross fixed capital formation increased from 42% in 1985 to 55% in 2010. This change helped to maintain the production volume despite a 40% decrease in labour input over 25 years, as is illustrated by the tractive power per job in agriculture (Graph G3).

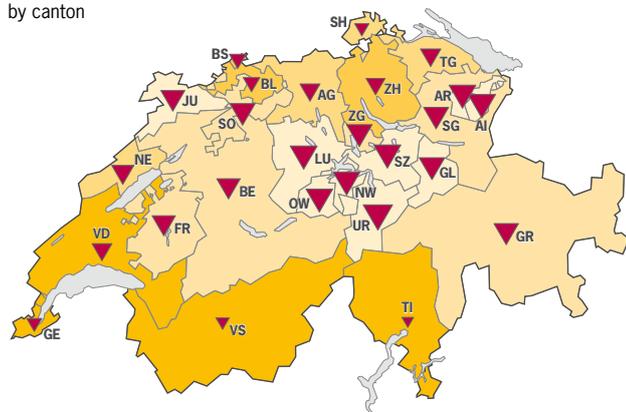
The agricultural sector units tried to gradually adapt their production to the changing "framework conditions". An observation of the state and dynamics of productive assets reveals the far-reaching changes that have marked Swiss agriculture over the past 25 years.

## Agriculture in the different cantons ...

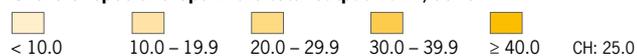
### Special crops and total output, 2011

M 1

by canton



Share of special crops in the total output 2011, as %



Variation of total output (at current prices) 2011 / 2007-2009, as %



Source: FSO, Regional accounts for agriculture

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In 2011, the factor income of Swiss agriculture, remunerating labour, capital and land, decreased by 4.0% compared with the average of the years 2007-2009. This trend is mainly a reflection of the evolution of total output, which fell by 5.6% (map M1). The cantonal disparities highlight the differences in product ranges. These depend on regional specificities due, in particular, to agro-climatic conditions (plains/mountains, precipitation, days of sunshine), value chain (mills, dairies, canneries, storage, etc.) and market opportunities (collection centres, proximity to urban centres). In the past five years, volatility in the price of milk (rise in 2008, fall in 2009 and another drop in 2010), over-supply in the pork market and pressure on the prices of major crops (cereals, oilseeds, sugar beet) have had a negative impact on cantons where these products play an important role. In contrast, the decline in output and consequently in the income generated, were strongly limited in regions characterised by special crops, particularly vegetables, fruits, grapes and wine.

#### About the primary sector accounts

The economic and satellite accounts of the primary sector are the economic synthesis statistics for the agriculture, forestry and fishing and fish farming branches. The methodology framework is the same as that used for the national accounts. The different modules are designed according to current international standards, namely the European System of Accounts 1995 (ESA 1995) as well as the specific extensions for agriculture and forestry established by Eurostat (Statistical Office of the European Commission). Drawn up each year since 2004 by the FSO, these accounts depict the main economic realities of the primary sector in Switzerland, from the production process (creation of value added) to the renewal of the productive assets (investments), as well as revenue generated for livelihood and investment.

## ... and in Europe

Between 2006 and 2011, the evolution in factor income in Switzerland and its neighbouring countries was influenced by that of the output (Graph G5). With unstable international markets, agriculture prices were extremely volatile, although this was more marked in the European Union (EU) than in Switzerland. High demand for raw materials caused prices to soar between 2007 and 2008. In 2008 the rise in production costs (feed, petrol) cancelled out that of sales (milk, cattle, cereals, etc.), in particular in the EU. The fall was even greater with the world economic crisis in 2009, when the European milk market collapsed. Overall, the price decline was curbed at the start of 2010.

In 2011 and according to initial estimates, the increase in factor income for the EU as a whole (+5.9% compared with 2010, at current prices) was mainly the result of an increase in the prices and volumes of most agricultural products. However, in France, the increase in input costs (feed, fertilizers, energy) offset the growth in output, triggering a decline in factor income. In Switzerland, direct payments and declining production costs have helped to stabilise agricultural income.

### Output and factor income

G 5

