



Agriculture and Foodsecurity Network: "Inclusive Land Governance – Road to Better Life"

**Field Days September 7, 2016:
Land Governance in Switzerland**

Visit 8: Nature conservancy, ecological balance

compiled by **AGRIDEA**

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ENTWICKLUNG DER LANDWIRTSCHAFT UND DES LÄNDLICHEN RAUMS
DÉVELOPPEMENT DE L'AGRICULTURE ET DE L'ESPACE RURAL
SVILUPPO DELL'AGRICOLTURA E DELLE AREE RURALI
DEVELOPING AGRICULTURE AND RURAL AREAS

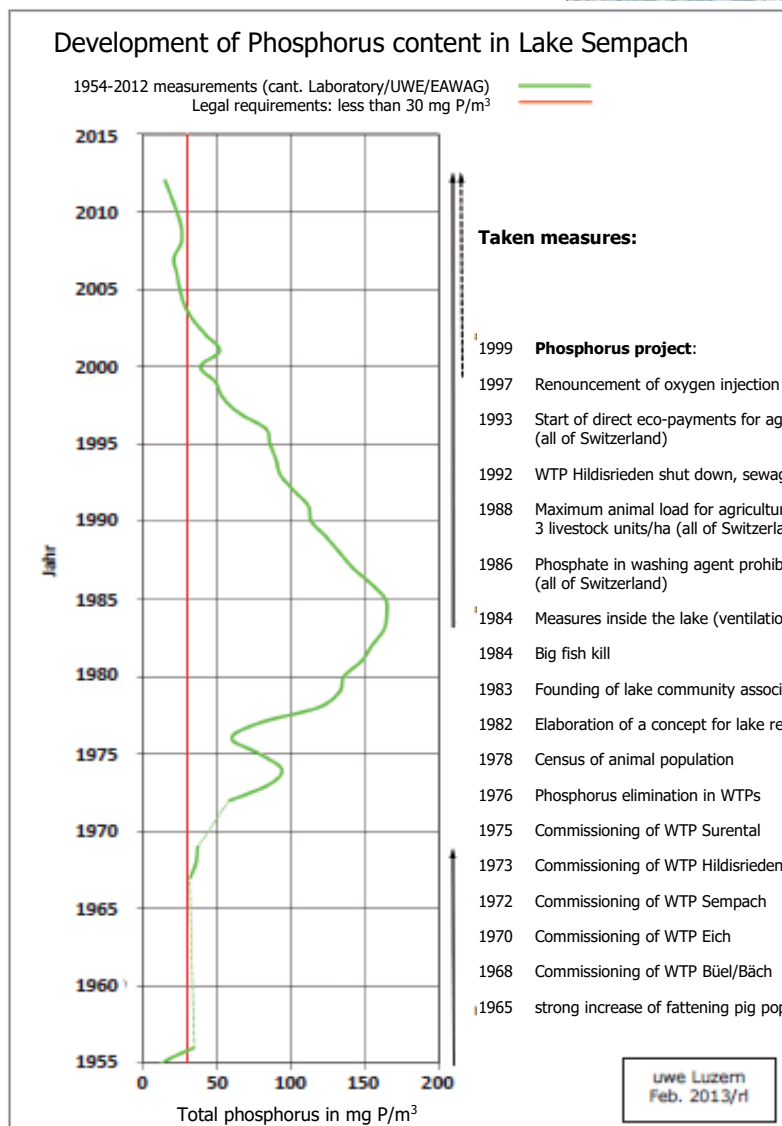
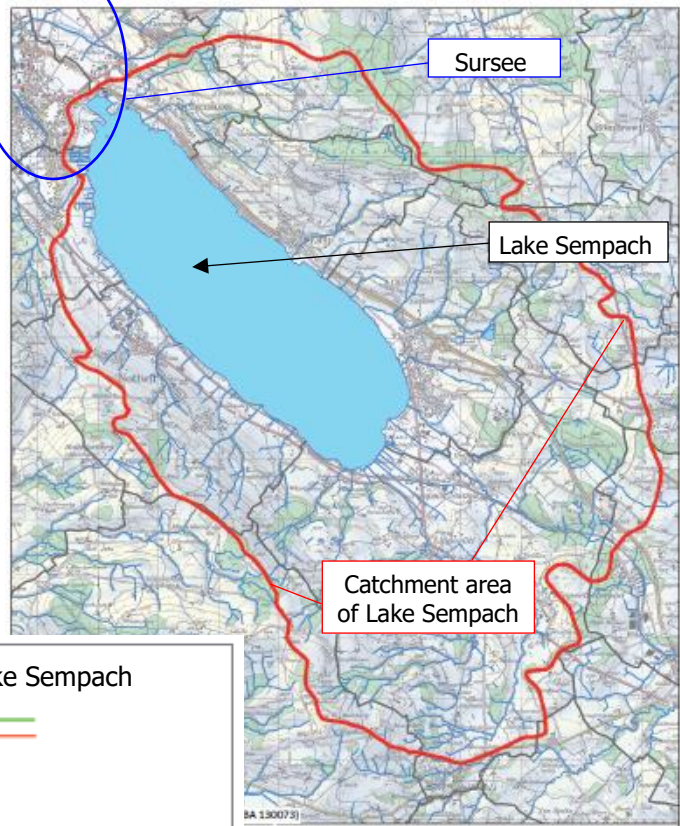
8 Nature conservancy – “Making ecology pay”

Field day example: Restoration of eutrophic Lake Sempach

Lake Sempach was highly eutrophic from the 1970s to the end of last century, due to the discharge of untreated sewage from industries and settlements, but also owing to a very animal-intensive agriculture in the Sempach region (see chapter 3.3.7), over-fertilizing the meadows and arable areas on its shores with heavy loads of mainly liquid manure.

This mostly uncontrolled development induced a dramatic increase of the nitrate and phosphorous content of the lake water, causing an excessive growth of algae. The increasing biomass of decaying algae used up more and more oxygen, the ensuing scarcity of oxygen has led to putrefaction processes and fish kills in the eighties.

Politics had to react, and by and by the administration tried to control the nitrate and phosphorus imissions into Lake Sempach (and other little lakes in the neighbourhood) with a series of measures (see description in graph below).



Phosphorus project

The phosphorus project in the Lake Sempach is based on voluntary participation of farmers in the area includes the following measures:

- Reduction of phosphorus fertilization to 80-100% of plant requirement (remuneration per kg P below 100%)
- Buffer zones along of all waters (5 to 15 m wide, no fertilization, compensation for loss of revenue)
- Timely application of farmyard manures
- Renunciation of winter fallows (open soil during wintertime)
- Promotion of direct and strip-cultivation sowing (mandatory for field slope >18%, remuneration of yield risks)
- Reduction of root crops (maximum of 20% in crop rotation)
- Regular soil samples to control nutrient content (paid by the project)
- Renovation of farmyard and drainage systems (prevention of runoffs into waters)
- Reduction of pig and chicken production (shut down of stables for at least 20 years is compensated)
- Retention ponds (to hold back fertilizer flows)
- Mandatory trainings for participating farmers

The project is supervised by the cantonal departments of agriculture and forestry as well as of environment and energy. In 2011 a total of 186 farms with a utilized agricultural area of 3'234 ha participated in the project – this represents 71% of the total agricultural area in the catchment area of Lake Sempach.

8.1 Mandatory nature protection – a comparatively good average standard

Basic nature protection requirements for agriculture

A number of laws and regulations set general guidelines for eco-friendly farming in Switzerland. They concern:

- Water protection: limits for animal density, buffer zones for fertilizers and pesticides, special requirements for the handling and spreading of pesticides, standards for stable buildings and facilities, rules for spreading solid and liquid manure etc.
- Soil protection: strict control of terrain remodelling, incentives for soil conserving practices etc.
- Biodiversity: strict protection of nature reserves and landscapes of national or regional significance, total herbicide treatments only with special permission, moratorium on GMO-plants, incentives for the promotion of biodiversity and of specific habitats etc.
- Animal welfare: standards for stable and animal husbandry measurements and materials, general rules for feeding, watering, keeping, treating and slaughtering animals, incentives for additional animal comfort measures etc.

Special water protection projects in agriculture

When the concentration of harmful substances in the water exceeds the thresholds defined in the water protection regulations, the canton has to determine the extent of the pollution and to find its source, to assess the effectiveness of possible measures and to implement the measures necessary for restoration. The Federation finances a substantial part of the additional costs and loss of earnings concerned farmers face because of agricultural measures applied to reduce the imission of pollutants.

Only well-coordinated measures ("measure-packages") that go beyond standard requirements of good agricultural practice and that will reach the aims of restoration with high probability can be supported (art. 62 of the water protection law). The "Phosphorus Project" of Lake Sempach was such a measure-package accompanied and surveyed by the federation and also supported with federal money.

8.2 Voluntary ecological sustainability – politics guide farmer's decisions

Up to the early nineties of last century, Swiss agricultural policy was based on an elaborate price and sales guarantee that was regularly adjusted to assure farmer's incomes to be comparable with the incomes of family businesses in other sections of rural economy. This price-subsidies-system led inevitably to overproduction, impressive import duties for food and feedstuff – and ever rising public spending for agriculture. Farmers intensified their production, with negative impact on nature and environment, international economic partners criticised Switzerland's high trade barriers and heavy market interventions, plus taxpayers were less and less willing to pass increasing budgets for agriculture every year.

Direct payments

Today's agricultural policy is dedicated to a triangle of economic, ecological and social sustainability, guiding farmer's economic decision with a system of direct payments. These direct payments represent compensation for services provided by farmers for the common good, differentiating between general and ecological direct payments. In addition, measures taken to improve agricultural infrastructure (credits for investments in buildings and

machinery, projects for reallocation and melioration of land etc.) should improve living standards and incomes in rural areas, particularly in mountain regions and peripheral areas.

Remuneration for services provided for the common good

Services provided by agriculture for the common good are remunerated through general direct payments. These include payments based on acreage and payments for grazing animals. Their aim is to ensure the appropriate use and care of all agricultural land. The more difficult farming conditions in hilly and mountainous regions are compensated for through additional payments for steep terrain and for keeping animals under difficult conditions. With the exception of payments for summering, direct payments are conditional upon "proof of ecological performance" PEP ("Ökologischer Leistungsnachweis"). This general requirements demand:

- keeping animals according to animal protection laws
- balanced use of fertilizer
- appropriate share of biodiversity areas (7% of utilized agricultural area)
- regulation-compliant management of objects in inventories of national significance
- regulated crop rotation
- effective soil protection
- purposeful selection and application of pesticides
- compliance regarding requirements for seed, plants, special cultures and buffer zones

Compensation for special performance with regard to the environment and livestock

Payments for ecological and ethological efforts, for eco-quality of extensive meadows, for alpine seasonal grazing ("Sömmerung") and for water protection are incentives to achieve levels beyond the PEP stipulations. With these measures the federal authorities pursue the following objectives:

- to promote biodiversity in agricultural areas
- to reduce the level of nitrates and phosphates in rivers and lakes
- to strengthen the comprehensive management of unfavorable areas
- to reduce the use of fertilizers etc.
- to promote resource-friendly production methods
- to promote extra animal-friendly conditions for livestock
- to ensure the sustainable use of alpine pastures
- to maintain a diverse and attractive cultural landscape

Financial impact and costs

The whole system of direct payments is fairly complex and a concise summary of all options a farmer faces counts 15 pages (which we will not copy into this study...). But the chart below gives an overview of the main types of direct payments and their financial importance.

Till 2013, direct payments made a distinction between general and ecological payments. Since 2014, the direct payments or contributions are allocated on 7 types of payments, named after their main objective.

Expenditures for direct payments in Switzerland

Expenditure areas:	2012	2013	2014	2015 ¹
	Mio. Fr.	Mio. Fr.	Mio. Fr.	Mio. Fr.
General direct payments (before 2014)	2 163	2 146		
Ecological payments (before 2014)	641	667		
Cultural landscape contribution			496	497
Security of supply contribution			1 096	1 098
Biodiversity contributions			364	379
Landscape quality contributions			70	120
Production system contributions			439	451
Resource efficiency contributions			6	53
Contributions for programs of water protection and resources (law on agriculture art. 77 a/b)			31	
Transition contributions			308	203
Reductions / Advance- and subsequent payments	13	15	6	
Total	2 791	2 798	2 804	2 801

Source: Federal agricultural ministry, Agricultural report 2015