



# Ecological Compensation Areas

**Swiss farmers are required to set aside part of their agricultural land for extensive cultivation in order to receive government subsidies. These so-called ecological compensation areas (ECAs) create habitats for plants and wildlife. Since 1993, ecological compensation areas eligible for direct government subsidies have been increasing from roughly 70'500 to 126'500 hectares. As a result, an average 12% of the country's total agricultural land are currently covered by ECAs. There are, however, marked regional differences, with mountain farms reporting an especially high number of ecological compensation areas. Approximately one third of all ECAs are of particular biological quality.**

**Status: July 2014**

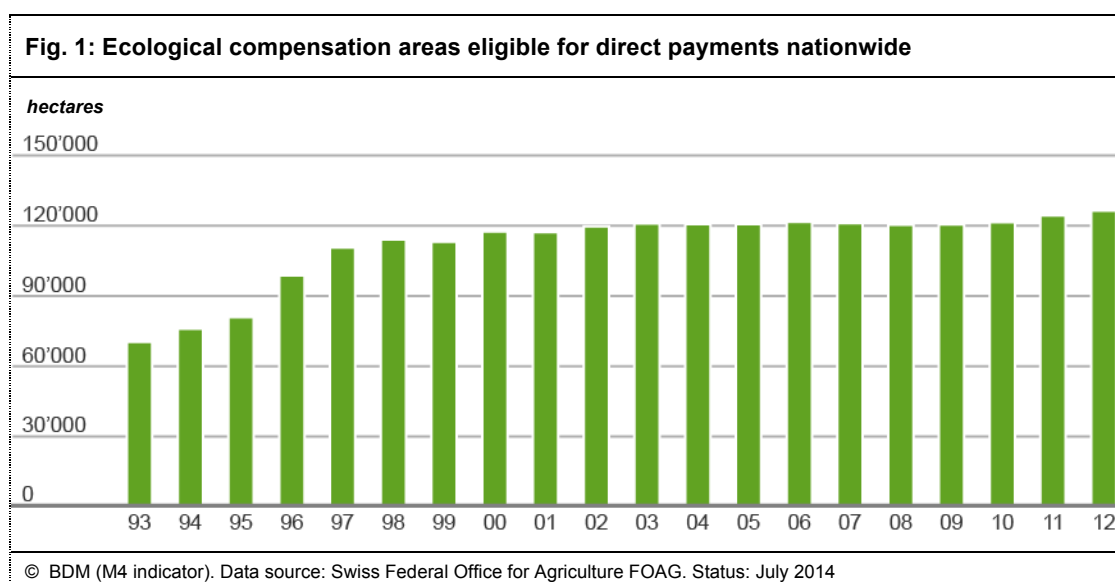
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Required by article 104 of the Swiss Federal Constitution to master a multifaceted task, Switzerland's agriculture has to make a key contribution to securing the population's food supply, preserving the man-made landscape, maintaining the country's decentralized settlement structure, and—safeguarding the natural basis of life. Farmers who safeguard that natural basis of life by conserving and promoting biodiversity receive direct government payments rewarding them for their ecological performances.

In 1993, Switzerland introduced a direct-payment system to reward farmers for their ecological performances. The practical implementation of this system is governed by the Ordinance on Direct Payments (ODP). In order to be eligible for such direct payments, farmers must produce Proof of Ecological Performance (PEP). Among other things, this involves evidencing that at least 3.5% of a farm's special-crop agricultural land and 7% of its remaining agricultural land are covered by ecological compensation areas.

## Development in Switzerland



### Comments

- Since Switzerland launched its ecological programs in 1993, ecological compensation areas have been expanding from approximately 70'500 to roughly 126'500 hectares. Including standard fruit tree ECA equivalents, ECAs now account for 12% of the country's agricultural land overall.
- Ecological compensation areas have been stagnating at roughly 120'000 to 124'000 hectares from 2002 to 2010. However, data seem to reveal a reincrease thereafter.

For complete data tables please refer to Appendix 1.

While article 40 of the Ordinance on Direct Payments stipulates the types of ecological compensation areas eligible for direct payments, categorization has been changing over time. As of 1999, federal statistics differentiate between "litter meadows", "hedges, field and bankside groves", and "extensively farmed grassland". Before that time, they had all been condensed into the same type of ECA. The ECA type named "extensively farmed grassland on set-aside arable land" was abandoned in 1999. Most of these areas are now covered by the ECA type named "extensively farmed grassland". From 1999 until 2000, they were regulated by transitional provisions. In Table 1, "extensively farmed grassland on set-

aside arable land” registered from 1993 to 2000 has been included under “extensively farmed grassland”. Standard fruit trees are converted into ECA equivalents, with one tree equaling one are (= 0.02 acre).

Table 1 below shows the development of ecological compensation areas in Switzerland. Complete figures detailing annual data as of 1993 are listed in Appendix 1.

<b>Tab. 1: Nationwide development of ecological compensation areas eligible for direct payments (in hectares, broken down by types)</b>													
	1993	1999	2000	2002	2004	2005	2006	2007	2008	2009	2010	2011	2012
Litter meadows		4'713	3'712	6'571	6'950	6'964	7'062	7'112	7'225	7'363	7'413	7'504	7549
Hedges' field and bankside groves		2'283	2'275	2'317	2'405	2'457	2'508	2'538	2'517	2'650	2'834	2'984	3165
Extensively farmed grassland	20'423	40'025	44'384	46'071	50'288	52'219	55'007	56'058	58'091	60'058	62'612	66'056	69'117
Low-intensity farmed grassland	31'038	40'388	40'106	36'928	33'659	32'236	30'693	29'325	27'404	25'860	24'166	22'919	21'608
Standard fruit tree equivalents	19'036	24'632	24'705	24'200	23'901	23'619	23'293	23'021	22'421	22'170	22'139	22'358	22'391
Wildflower strips		746	1'315	2'283	2'429	2'321	2'298	2'141	1'997	1'751	1'764	1'865	1'894
Crop-rotation fallow land		328	1'019	1'325	1069	893	799	845	740	593	508	580	568
Crop margins		59	48	35	35	51	39	38	37	45	40	56	75
Wild herb borders on arable land									16	35	59	83	102
Total including standard fruit trees	70'497	113'174	117'564	119'730	120'737	120'761	121'699	121'079	120'448	120'525	121'535	124'405	126'469
Total excluding standard fruit trees	51'461	88'542	92'859	95'530	96'836	97'142	98'406	98'058	98'026	98'355	99'396	102'047	104'078

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### Comments

- Comparing 1993 and 2012, all types of ecological compensation areas have increased, except for low-intensity farmed grassland.
- Low-intensity farmed grassland and standard fruit tree equivalents are following a largely similar pattern: After initially increasing, registered ECAs of these two types have been declining again since 1998, even though standard fruit trees regained a little more ground since 2011.
- Ecological compensation areas eligible for direct payments are mainly composed of grassland (70%) and standard fruit tree ECA equivalents (20%). Wildflower strips have undergone a remarkable increase: from 77 hectares in 1994 to 2'429 hectares in 2004. After their total size had redeclined since

then, it started to reincrease in 2010. Crop-rotation fallow lands and crop margins only became part of the direct-payment system in 1999, and not many ECAs of these types have been registered so far. The same goes for another new type added in 2008: “wild herb borders on arable land”, consisting of perennial strips of native herbs or grasses.

- In its technical regulations regarding Proof of Ecological Performance (PEP), the Ordinance on Direct Payments (ODP) stipulates various types of ecological compensation areas that, while ineligible for direct payments, may—under certain conditions—be taken into account when computing the ECA share required to establish Proof of Ecological Performance. Aside from extensive pastures, woodland pastures, and grape areas featuring high species diversity, these include small structures such as dry walls, ditches, pools and ponds, or site-appropriate isolated trees. Ineligible types of ECAs were first covered statistically in 1999. 2012, roughly 30'000 hectares have been recorded all over Switzerland, primarily consisting of extensive pastures (86%) and woodland pastures (10%).

## Development in the cantons

Table 2 below shows the combined development of all types of ecological compensation areas eligible for direct payments, broken down by cantons. There are no 1993 data differentiated by canton available for "extensively farmed grassland on set-aside arable land" and "low-intensity farmed grassland".

**Tab. 1: Nationwide development of ecological compensation areas eligible for direct payments (in hectares, broken down by types)**

	1993	1999	2000	2002	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>AG</b>	2'406	6'800	7'109	7'349	7'634	7'645	7'686	7'711	7'784	7'793	7'900	8'067	8'170
<b>AI</b>	44	500	483	520	558	554	558	550	545	538	530	523	527
<b>AR</b>	277	635	639	857	852	860	862	840	834	837	839	854	864
<b>BE</b>	6'193	17'440	18'564	18'684	18'688	18'645	18'714	18'402	18'431	18'385	18'563	18'954	19'216
<b>BL/BS</b>	1'512	3'256	3'364	3'406	3'397	3'434	3'458	3'429	3'410	3'409	3'405	3'433	3'428
<b>FR</b>	991	6'314	6'488	6'599	6'621	6'612	6'570	6'562	6'507	6'445	6'439	6'502	6'558
<b>GE</b>	214	940	1'124	1'174	1'185	1'148	1'142	1'141	1'126	1'112	1'122	1'195	1'213
<b>GL</b>	593	1'124	1'131	1'062	1'058	1'041	1'018	922	900	895	844	871	870
<b>GR</b>	6'085	14'889	14'906	14'324	14'126	14'151	15'106	15'037	15'092	15'286	15'392	15'810	16'061
<b>JU</b>	512	3'071	3'123	3'167	3'143	3'170	3'159	3'176	3'154	3'203	3'287	3'426	3'507
<b>LU</b>	3'879	6'550	8'738	8'250	8'474	8'619	8'650	8'747	8'672	8'716	8'866	9'191	9'391
<b>NE</b>	236	1'875	2'050	1'922	1'850	1'816	1'829	1'820	1'789	1'751	1'754	1'752	1'741
<b>NW</b>	480	945	938	925	945	937	940	948	947	946	932	937	947
<b>OW</b>	227	724	1'072	1'104	1'093	1'092	1'068	1'053	1'071	1'074	1'076	1'097	1'115
<b>SG</b>	3'343	7'728	6'039	8'108	8'243	8'246	8'204	8'184	7'980	7'960	7'989	8'039	8'138
<b>SH</b>	369	1'315	1'532	1'591	1'677	1'710	1'741	1'772	1'756	1'749	1'771	1'844	1'863
<b>SO</b>	1'447	3'964	4'148	4'185	4'274	4'254	4'225	4'228	4'192	4'178	4'277	4'447	4'332
<b>SZ</b>	849	2'417	2'439	3'152	3'273	3'286	3'348	3'345	3'348	3'361	3'404	3'441	3'461
<b>TG</b>	2'752	5'000	5'125	5'113	5'200	5'254	5'251	5'253	5'115	5'153	5'218	5'340	5'408
<b>TI</b>	69	1'547	1'579	1'614	1'617	1'642	1'639	1'638	1'615	1'660	1'655	1'660	1'706
<b>UR</b>	205	1'162	1'229	1'222	1'203	1'210	1'220	1'257	1'301	1'331	1'320	1'339	1'360
<b>VD</b>	1'665	9'203	9'744	9'806	9'790	9'684	9'639	9'557	9'526	9'495	9'575	9'945	10'484
<b>VS</b>	1'112	5'971	5'841	5'323	5'067	4'962	4'822	4'690	4'503	4'297	4'154	4'168	4'358
<b>ZG</b>	437	1'515	1'533	1'585	1'634	1'635	1'639	1'624	1'628	1'646	1'707	1'746	1'786
<b>ZH</b>	2'461	8'286	8'623	8'688	9'132	9'155	9'210	9'193	9'221	9'306	9'514	9'820	9'965
<b>Total</b>	<b>38'357</b>	<b>113'171</b>	<b>117'562</b>	<b>119'729</b>	<b>120'737</b>	<b>120'761</b>	<b>121'699</b>	<b>121'080</b>	<b>120'448</b>	<b>120'525</b>	<b>121'535</b>	<b>124'404</b>	<b>126'469</b>

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**Comments**

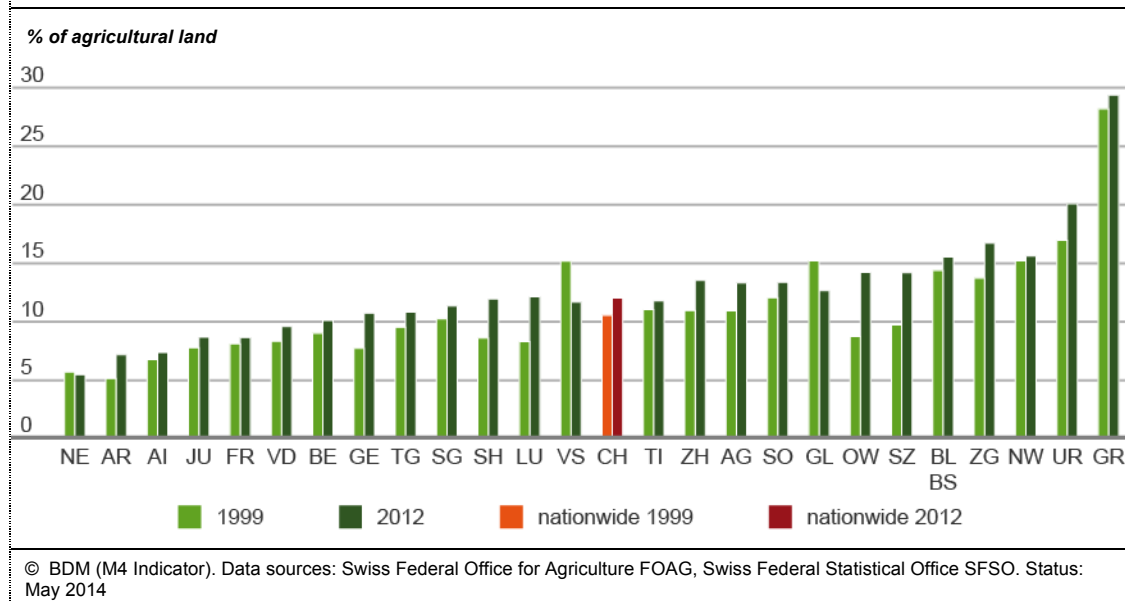
- Between 1993 and 2012, ecological compensation areas eligible for direct payments increased in all cantons.
- Compared to the previous year, 2012 ecological compensation areas eligible for direct payments increased by a total of 2'198 hectares in 21 cantons. As the remaining four cantons registered a total decrease of only 133 hectares, this results in a net gain of 2'065 hectares. ECAs shrank in the cantons of Basel, Glarus, Solothurn and Neuenburg, while they gained the most ground in the cantons of Waadt, Bern, Graubünden, Bern, Luzern and Wallis.
- From 1993 to 2000, ecological compensation areas eligible for direct payments increased tenfold in Appenzell Innerrhoden (AI), and even more than twentyfold in Tessin (TI).
- In Neuenburg (NE), ecological compensation areas eligible for direct payments have been almost continually diminishing up until 2012 since reaching their largest extent in 2000.

For complete annual data tables starting in 1993 please refer to Appendix 2.

## Additional findings

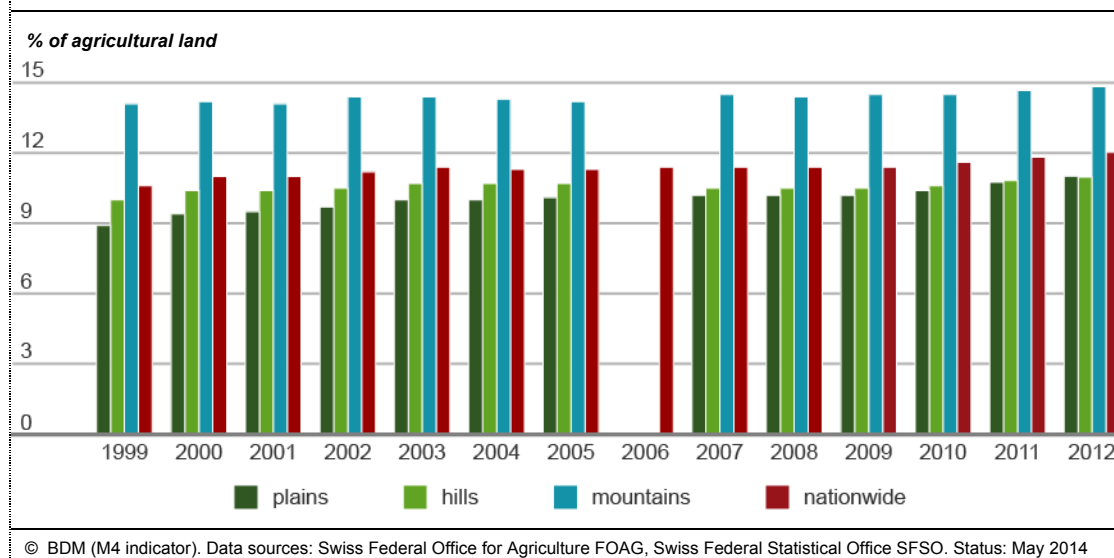
Figures 2 and 3 below illustrate how the shares of ecological compensation areas eligible for direct payments in the cantons' agricultural land and in Switzerland's agricultural regions (plains, hills and mountains<sup>1</sup>) have developed between 1999 and 2011. As zones were classified differently from 1993 until 1998, data gathered in this earlier period cannot be compared to later figures, so they are disregarded for the purpose of this comparison. There are no 2006 data available on agricultural land differentiated by regions. For complete annual raw data tables please refer to Appendix 2.

**Fig. 2: Percent shares of ecological compensation areas eligible for direct payments in the cantons' agricultural land**



<sup>1</sup> Article 2 of the Ordinance on Agricultural Zones lists the criteria used for demarcating agricultural zones. These zones have been grouped into the following three regions:  
 plains: plains zone  
 hills: hill zone, mountain zone I  
 mountains: mountain zones II to IV.

**Fig. 3: Percent shares of ecological compensation areas eligible for direct payments in the agricultural land of agricultural regions and Switzerland overall**



### Comments

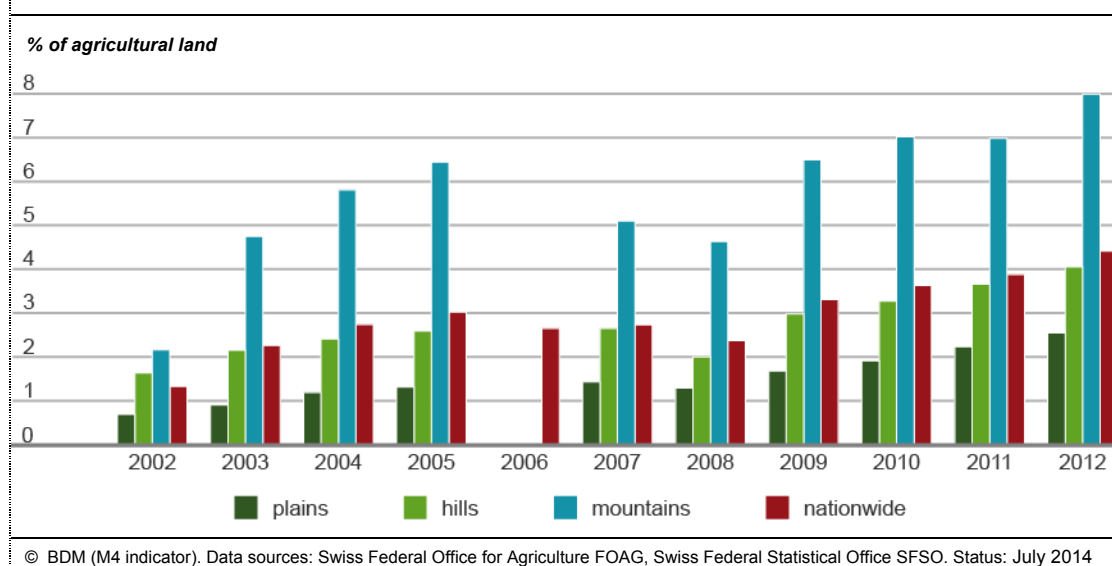
- There are no agricultural land data differentiated by regions or cantons available for 2006.
- Between 1999 and 2012, shares of ecological compensation areas eligible for direct payments increased in all cantons except Wallis, Glarus and Neuenburg. However, Graubünden features the largest ECA share by far.
- In 2012, 14.8% of the agricultural land in the mountains were registered as ecological compensation areas eligible for direct payments, versus 11% in the hills and in the plains. This amounts to a Swiss average of 12%.
- Comparing 2012 to 2011, ecological compensation areas eligible for direct payments have slightly increased in all regions, with growth lowest in the hills (+1.2%). Whether or not this will turn into a favorable long-term development remains to be seen.
- According to the figures supplied by the Swiss Federal Statistical Office (SFSO), Switzerland's agricultural land as a whole has been decreasing between 1999 and 2011 (cf. Appendix). It is unclear whether the short-lived increase registered in 2004 and 2005 must be attributed to a minor change in the SFSO's data acquisition method. Another slight increase has been recorded for 2011 against 2010.
- By 2005, ecological compensation areas were to constitute at least 10% of Switzerland's agricultural land, with 65'000 hectares of these ECAs located in the plains. The nationwide 10% target set by the federal government was reached. The ECA size aimed at for the plains was nearly achieved, when counting ECAs ineligible for direct payments, which are disregarded for the purpose of this comparison. In the plains, the size of ecological compensation areas eligible for direct payments was roughly 54'500 hectares.



## Ecological compensation areas of particular biological quality

In 2001, Switzerland adopted an Ordinance on Ecological Quality (OEQ) in order to preserve “ecological compensation areas of particular biological quality”. Ecological compensation areas make the most substantial contribution to preserving and promoting species diversity if they feature certain indicator species and structural characteristics and/or if their location is beneficial from an environmental point of view. The OEQ also stipulates quality criteria for standard fruit tree orchards, hedges, litter meadows, and species-rich meadows. Cantons are allowed to adapt these minimum requirements to regional conditions. In order to receive quality-dependent direct payments, farmers are required to charge experts with assessing their ecological compensation areas.

**Fig. 4: Percent shares of ecological compensation areas of particular biological quality in the agricultural land of agricultural regions (plains, hills and mountains<sup>2</sup>) and Switzerland overall**



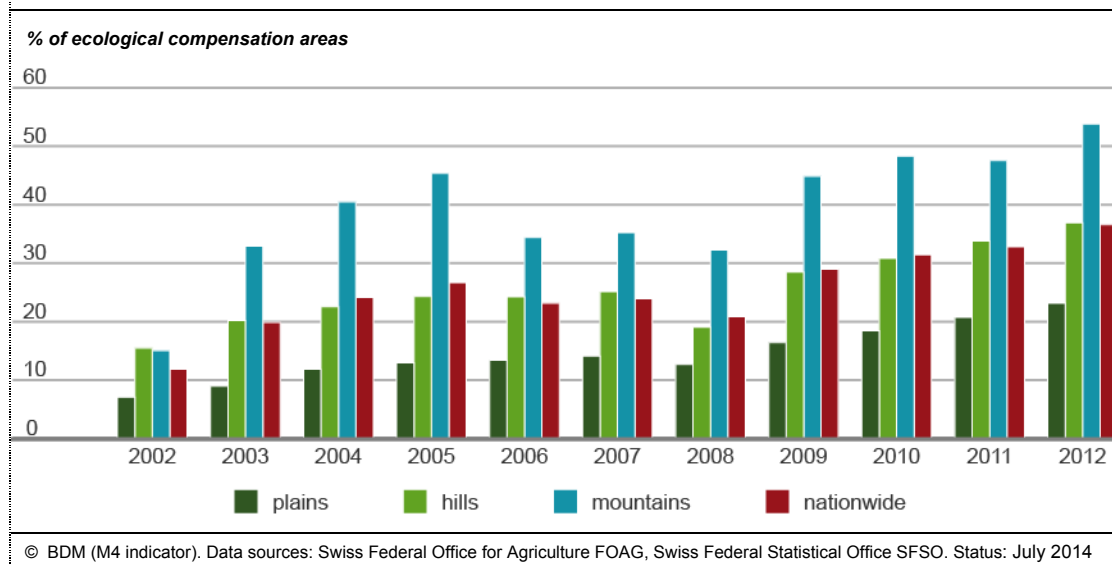
<sup>2</sup> Article 2 of the Ordinance on Agricultural Zones lists the criteria used for demarcating agricultural zones. These zones have been grouped into the following three regions:

plains: plains zone

hills: hill zone, mountain zone I

mountains: mountain zones II to IV.

**Fig. 5: Percent shares of ecological compensation areas of particular biological quality in the ECAs of agricultural regions (plains, hills and mountains<sup>3</sup>) and Switzerland overall**



### Comments

- Data for 2002 are fragmentary, and there are no agricultural land data differentiated by regions available for 2006.
- While ecological compensation areas subsidized for particular quality had been increasing from 2002 to 2005, they decreased by roughly 4'000 hectares in 2006, particularly in the mountains. In 2007, high-quality ECAs slightly reexpanded in all regions, only to decline again in 2008. The year 2009 recorded a comparatively massive increase of close to 10'000 hectares, with this gain being particularly marked in the mountains. So far (2012), the increase has been continuing. At 4.4%, however, the average share of high-quality ECAs in Switzerland's agricultural land stays small. As the altitude of high-quality ECAs increases, so does their share in the agricultural land: In the mountains, it amounted to 8% in 2012.

## Significance for biodiversity

Ecological compensation areas are designed to complement nature reserves by providing habitats for plants and animals within agricultural zones. This is meant to promote natural species diversity while preventing further species losses and allowing threatened species to reenlarge their ranges. Hence, an increase in compensation areas ought to increase biodiversity.

The M4 indicator shows ecological compensation areas in compliance with the Ordinance on Direct Payments to have been increasing since their introduction in 1993 until 2002. Since that year, the total size of ECAs had been stagnating at around 121'000 hectares until 2010. Since 2011, however, total ECA size

<sup>3</sup> Article 2 of the Ordinance on Agricultural Zones lists the criteria used for demarcating agricultural zones. These zones have been grouped into the following three regions:

plains: plains zone

hills: hill zone, mountain zone I

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grew to roughly 126'500 hectares. Two case studies realized by the Swiss Federal Research Station for Agroecology and Agriculture<sup>4</sup> prove that species diversity is wider on ecological compensation areas than on intensively farmed lands. Furthermore, ECAs harbor a larger number of demanding and specialized species. However, their quality still leaves to be desired. Assessed by the standards stipulated in the Ordinance on Ecological Quality (OEQ), 72% of *extensively farmed grassland* and 89% of *low-intensity farmed grassland* located on the Central Plateau fall short of federal quality targets. Things look better in the mountains, where both grassland types mostly fulfill OEQ requirements, which means their quality is good. This in turn promotes biodiversity.

The importance of ECA quality is illustrated by research of the Swiss Ornithological Institute Sempach<sup>5</sup>. In regions distinctly upgraded by high-quality ecological compensation areas, population sizes of breeding birds started to increase shortly after. Evidenced by the Swiss Bird Index SBI for the period of 1990 to 2003, population declines have affected a particularly large number of typical cropland bird species<sup>6</sup>. Conversely, populations of individual species such as the potentially endangered Common Stonechat (*Saxicola torquatus*) have increased (cf. Z6 Indicator), among other things favored by the increasing number of wildflower strips.

Ecological compensation also helps to preserve ecologically valuable habitats located in areas no longer yielding a profit in agricultural production. Direct payments enable farmers to keep cultivating even low-productivity areas in remote mountain locations. This counteracts forest encroachment, a trend which would, for instance, destroy the habitat of light-requiring species. In other regions, ecological compensation allows preserving near-natural habitats valuable for species diversity, such as standard fruit tree orchards and litter meadows. Moreover, ecological compensation areas coupled with other measures required for Proof of Ecological Performance have a favorable effect on aquatic species diversity as well. Since ECAs are not or hardly fertilized, pollution of ground and surface waters is reduced (cf. E13 Indicator).

Ecological compensation areas are still far from exhausting their potential to promote biodiversity. In order to allow threatened species to reenlarge their ranges and to prevent further species losses, initiated efforts must be continued and complemented by additional measures.

## Definition

**Changes in the sum of all areas designated to contribute to preserving and promoting species and habitat diversity in agriculture, the adequate use of which is secured by contract. Changes will be monitored for Switzerland as a whole as well as broken down by area types and by individual cantons.**

This indicator is founded on the Swiss Ordinance on Direct Payments to Farmers dated December 7, 1998 ("Ordinance on Direct Payments").

<sup>4</sup> Herzog, F.; Walter, T. (eds.), 2005: *Evaluation der Ökomassnahmen Bereich Biodiversität. Schriftenreihe FAL 56*. 208 S.

<sup>5</sup> Kohli, L.; Spiess, M.; Herzog, F.; Birrer, S., 2004: *Auswirkungen ökologischer Ausgleichsflächen auf typische Kulturlandvögel und ihre Lebensräume. Sempach, Schweizerische Vogelwarte*. 84 S.

<sup>6</sup> Zbinden, N.; Schmid, H.; Kéry, M.; Keller, V., 2005: *Swiss Bird Index SBI. Artweise und kombinierte Indices für die Beurteilung der Bestandsentwicklung von Brutvogelarten und Artengruppen in der Schweiz 1990–2003. Sempach, Schweizerische Vogelwarte*. 44 S.

[The publications listed in these footnotes are not available in English.]

## Surveying methods

Farm data acquisition in Switzerland is carried out jointly by the Swiss Federal Office for Agriculture (FOAG) and the Swiss Federal Statistical Office (SFSO). This data includes information on ecological compensation. Analyses made by the federal offices are based on standardized questionnaires that must be filled in by the farmers. Their statements, which refer to an appointed day in early May, are verified by national and cantonal authorities and managed in the FOAG's central database.

## Further information

### In charge of this indicator

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### Related indicators

- > M5 "Areas Farmed Organically"
- > E7 "Intensity of Agricultural Land Use"

### Additional sources of information

- > [www.blw.admin.ch/index.html?lang=en](http://www.blw.admin.ch/index.html?lang=en) comprehensive information on the Swiss Federal Office for Agriculture FOAG
- > [www.bfs.admin.ch/bfs/portal/en/index.html](http://www.bfs.admin.ch/bfs/portal/en/index.html) comprehensive information on the Swiss Federal Statistical Office SFSO
- > [www.admin.ch/ch/d/sr/910\\_13/index.html](http://www.admin.ch/ch/d/sr/910_13/index.html) Ordinance on Direct Payments (not available in English)
- > [www.admin.ch/ch/d/sr/910\\_14/index.html](http://www.admin.ch/ch/d/sr/910_14/index.html) Ordinance on Ecological Quality (not available in English)
- > [www.admin.ch/ch/d/sr/912\\_1/index.html](http://www.admin.ch/ch/d/sr/912_1/index.html) Ordinance on Agricultural Zones (not available in English)

### Additional non-illustrated appendices

- > Appendix 3: Agricultural land in the cantons (in hectares)

*This information is based on the German-language document 1180\_M4\_Basisdaten\_2012\_v1.docx dated July 1, 2014.*