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Agricultural crop insurance in Switzerland, focusing on drought

- Droughts, resulting damages, and management alternatives increasingly receive attention from decision makers at all levels.
- As a country outside the European Union, Switzerland offers an interesting case to investigate drought management options.
- Since 2015, indemnity-based drought insurance is available for arable crops and grassland.
- In addition, the Swiss Agro Index was developed as a supporting tool to improve timely reporting of drought damages.
- This factsheet outlines the Swiss agricultural crop insurance set-up, with a focus on products related to drought. In addition to official information, the Swiss Hail Insurance provided support to the content of this factsheet.

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Agricultural crop insurance in Switzerland

Early attempts to cover hail damage for Swiss farmers reach back to the beginning of the 19th century. In the aftermath of several severe damage events, compensation payments were reduced repeatedly, which caused farmers to lose trust and eventually to stop purchasing hail insurance. Consequentially, various national and international insurance companies withdrew from the Swiss market (Landwirtschaftlicher Informationsdienst, 2005).

In 1880, the Swiss Hail Insurance Company, Association (Schweizer Hagel-Versicherungs-Gesellschaft, Genossenschaft) was founded and is now the most important private insurance company for the agricultural sector. The Swiss Hail Insurance was created as a non-profit organization. Up until today, the insurance company operates mutually, and premium surpluses are reimbursed to policy holders.

Multi-peril insurance was introduced in the 1970s and coverage was continuously expanded. Today, damages from 14 different weather risks are covered, including drought. Restoration costs of arable land are included for all insured events of the respective crop. In 2015, the Swiss Hail insurance listed 33,000 insurance contracts for a total area of 260,000 hectares arable land. In 2018, 76% of all arable crop-producing, 81% of all wine producing, 33-60% of all horticultural, and 10% of all grassland farms held some kind of insurance contract with the Swiss Hail Insurance Company. 12% of all arable crop-producing farms held additional drought insurance (Schweizer Hagelversicherung, 2018).

Table 1: Insurable risks – Swiss Hail Insurance Company. Adapted from www.hagel.ch.

	Drought	Hail	Flooding/ rainwash/ run-off	Landslide	Lightning & fire	Earthquakes	Storm	Snow pressure	Heavy rainfall	Grain sprouting	Frost
Field crops	■	■	■	■	■	■	■	■	■	bread cereals	
Root crops	■	■	■	■	■	■			Sugar & fodder beet		
Oils seeds	■	■	■	■	■	■	sunflower & soybean	canola & soybean	■		
Horticulture		■	■	■	■	■	■	■			
Fruits & Berries		■	■	■	■	■	■			■	■
Tobacco		■	■	■	■	■					
Pasture/ Grassland	■	■	■	■	■	■		■			

Field crops: cereals, corn, protein crops (field beans, peas and lupine); Root crops: sugar and fodder beet, potatoes; Oil seeds: canola, sunflower, soybean; Horticulture: vegetables, flower and tree nurseries.

Policies cover up to 100% of restoration costs and damages resulting from hail. Compensation values for damages resulting from all other weather risks can be covered up to 90%.

Drought insurance products

Arable crops

The Swiss Hail Insurance currently offers three different multi-peril crop insurance products. To qualify for cover, farmers have to insure their entire open arable land and thereby all crops grown. "Ackerbau Pauschal Plus" is a multi-peril insurance product that covers weather risks including drought.

Basic premiums are calculated per hectare of open arable land. They depend on crop grown, local hail risk and on years without reported damages (Bonus/malus system). For new insurance contracts, premiums are 0.8 of the basic premium. If the insured submits one or more damage reports and estimations during one calendar year, premiums will be raised by 0.1 for the following two years irrespective of actual outcome. The maximum premium is 1.5 of the basic premium. In contrast, if the insured does not submit any damage estimation in two subsequent years, premiums will be lowered by 0.1. The minimal premium is 0.6.

Compensation payments are based on standard values ("Arenwerte") per crop and 100m^2 (= "Are") in CHF. The total area per crop is multiplied by the Arenwert of the respective crop. These values are used as compensation reference in case of damage. If a farmer considers the standard values as too low, he/she has the option of insuring higher values by purchasing supplementary insurance.

Table 2: "Arenwerte": Standard values per crop and 100m^2 in CHF for drought-insurable crops. Adapted from www.hagel.ch.

		Crop	Maximal value in CHF/100m^2
Field crops	Cereals	Seed spelt	52
		Seed wheat	47
		Spelt, rice, millet, buckwheat	45
		Wheat (winter and summer)	42
		Sorghum, Fodder seed wheat, seed triticale, seed winter rye	36
		Fodder wheat	35
		Winter rye	32
		Winter barley, triticale	30
		Oat, summer barley	25
		Corn	36
	Protein crops	Peas, lupine	20
		Field beans	16
Root crops		Seed potatoes	160
		Table potatoes	140
		Sugar beet	60
Oilseeds		Canola	38
		Sunflower	30
		Soybean	23


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For damages resulting from drought, actual yield losses are considered supported by a precipitation index. Damages can be claimed if expected losses amount to more than 30% of the yield. The remaining total yield will be determined based on the harvested amount or based on yield ascertainment in field. Compensation payments will be equal to the difference between yield and the reference value as contracted.

Additionally, drought damages should be reported when

(1) precipitation falls below an indexed total amount of 20mm in 30 subsequent days or
(2) a total amount below 60mm in 60 subsequent days.

The Swiss Agro Index (www.swissagroindex.hagel.ch) was developed by the Swiss Hail Insurance and calculates regional precipitation sums relative to a reference period (2003-2014). This index is calculated for a grid size of 1 km^2 based on interpolated precipitation data and adjusted using radar data. However, actual compensation payments will be calculated on the yield loss mentioned above. At the time (status September 2018), the Swiss Agro Index is designed as supporting tool for insured farmers to help them report damages in a timely manner.

Grassland

For grassland, three different products are currently available, but only the "Grasland Pauschal KLIMA" covers drought damages. Here, policies cover the entire grassed area, excluding alpine and extensive pastures, and house gardens. For drought damages, it further includes direct costs for fodder production. For all other risks, quantitative losses and reproduction costs of grassland are covered.

Drought damages are calculated as reduced yields due to water deficits based on a drought index (www.swissagroindex.hagel.ch). The drought index consists of the daily soil evaporation and local precipitation data during the cover period of April 1 to September 30. Compensation payments are made upon the index values falling below a contracted threshold. At the end of each insured period, the insured are able to check on the website if they will receive a payment.

Weather dependent businesses including e.g. tourism and farming, have the further opportunity to insure themselves against frost, rainfall and drought via CelsiusPro. CelsiusPro is a private insurance company founded in 2008 that specializes in industrializing index insurance solutions to mitigate the effects of adverse weather, climate change and natural catastrophes (CelsiusPro, 2018). However, until 2011 CelsiusPro was not broadly established as the number of insured farmers was smaller than 20 (El Benni, 2012).

Government Compensation and Subsidies

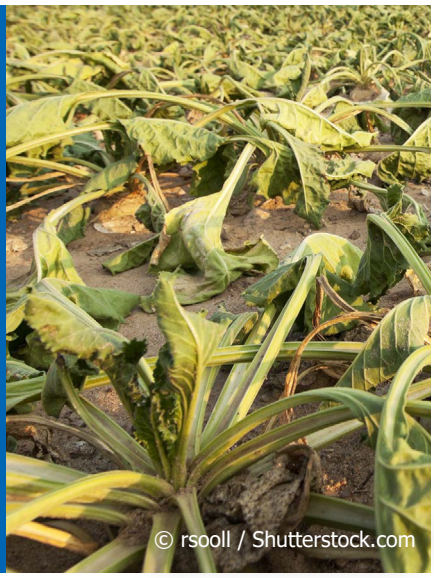
In contrast to member countries of the EU, governmental support regarding risk management instruments is rather limited in Switzerland (Bielza et al., 2006).

Due to difficulties faced in the first years of operation, in 1898 first premium subsidies were granted with both the federal and the cantonal governments contributing equal amounts.
Due to cost cutting, the Swiss government stopped subsidizing insurance premiums in 1967. Few cantons (Appenzell Innerrhoden, Basel Land, Nidwalden, Schwyz and Zug in 2005 (Landwirtschaftlicher Informationsdienst, 2005)) continued to cover a small percentage - 2% of total hail insurance premiums in the early 1990s, and 0.03% in 2009 on average (Finger and Lehmann, 2012) of premiums.

In Switzerland, other governmental measures like direct payments and financial border protection importantly contribute to stabilize farm income (Schweizerische Eidgenossenschaft, 2016).

The Swiss agriculture sector

According to the agricultural structural survey of 2017, roughly a quarter of the total Swiss area is arable land (1,046,108.7 ha) of which 70.1% is grassland, followed by grain cultivation with 13.7%. Switzerland has 51,620 agricultural holdings with on average 20.3 hectare. A majority of 43,600 farms keep animals. 71.1% of all farmers run their farms as a full-time business whereas 28.9% rely on an additional source of income. 44.4% of farms are situated in the Swiss lowlands. The remaining 55.6% are situated in hilly or mountainous areas. 14% of all farms are run organically while 86% are conventional farms (Bundesamt für Statistik, 2018).



Glossary

Arenwerte: The Swiss word "Are" in an old term that refers to a unit area of 100m^2. Arenwerte define monetary standard values in Swiss Francs (CHF) for each crop per 100m^2.

Bonus-malus-system: The adjustment of premiums paid according to the claim history. Consequently, a bonus is a premium reduction upon renewal of a policy in the case that no claim was made for a certain period. Malus is then a premium increase if claims were made in a certain period.

Border protection: The Swiss border protection system plays an important role for reducing price risks. Due to restricted import volumes, price volatility of Swiss national markets is reduced.

Direct payments: Direct payments are governmental contribution payments for public services performed by farmers.

Multi-peril insurance: Multi-peril insurance solutions do not cover damages resulting from single risks but bundle multiple coverages.

Mutual insurance: A mutual insurance company is owned entirely by its policy holders. Any profits are kept within the company or refunded to policy holders by means of dividend distributions or reduced premiums.

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FARM
Subsidized drought insurance and its alternatives

FARM – Farmers and Risk Management: Examining subsidized drought insurance and its alternatives. FARM commenced in May 2016 as a three-year research project funded by the Austrian Climate Research Program (KR15AC8K12597). In the light of increasing climate and market risks, the project examines agricultural insurance as part of integrated drought risk management options, particularly in Austria. FARM has an international component comparing agricultural risk management arrangements in several countries.

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