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Federal Department of Economic Affairs,
Education and Research EAER
Agroscope

Experiences from Switzerland

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www.agroscope.ch | good food, healthy environment





Zürich area, plain region





Sonnenberg, plain region





Goms, mountain region





Saas-Grund, mountain region





Vineyard, Lake Biel/Bienne





Relevance

- Obviously, land fragmentation is a topic in Swiss agriculture.
- However it is not addressed:
 - Not a topic in the agricultural policy debate
 - Not a topic for farm advice services
(cooperation is a topic)
 - No research questions for Agroscope

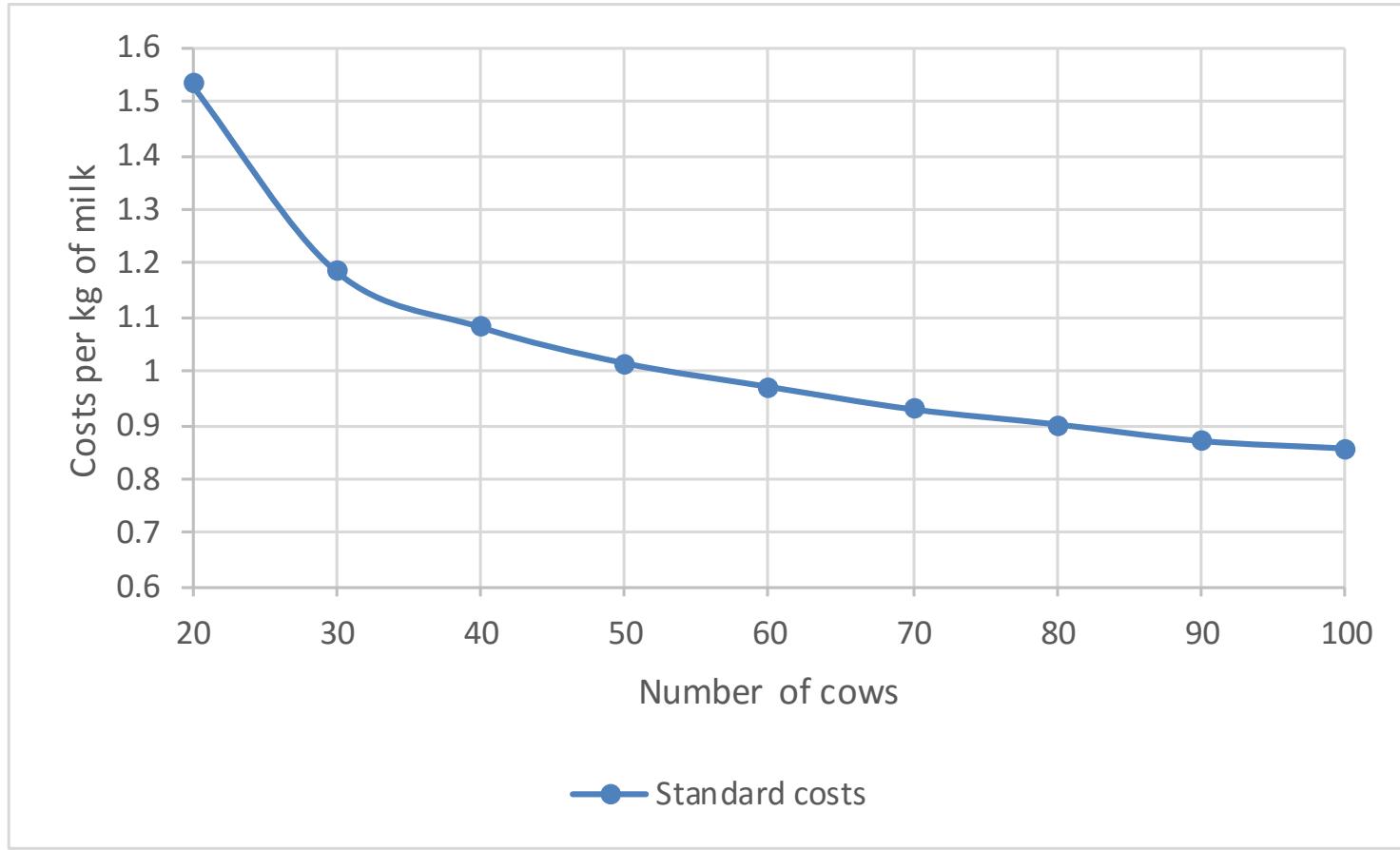


Structure of Swiss Agriculture

	Situation 2016	Annual change 1998-2016
Number of farms	44651	-1.75%
Arable land	25.3 ha	+1.88 %
Livestock Units	33.3 LU	+1.93 %
Labour forces	1.88 full time work forces	+0.46 %



Economies of scale in milk production (standard costs)



Source: Gazzarin et al., 2005



Income statement for dairy, actual costs per livestock unit, mountain region

	All	Cost share (%)	Worst quarter	Best quarter	Difference	P-Value
Number of observations	941		211	209		
Earnings	7323		7067	7574	507	** 0.003
Total costs	9979	100	11827	8056	-3771	*** 0.000
<i>Direct costs</i>	1804	18	2007	1646	-361	*** 0.000
Feed	1046	11	1175	945	-231	*** 0.000
<i>Indirect costs</i>	7827	78	9479	6061	-3418	*** 0.000
Labour	4764	48	5721	3493	-2228	*** 0.000
Machine	1502	15	1852	1246	-606	*** 0.000
Buildings	1050	11	1297	891	-406	*** 0.000
Profit/loss	-2656		-4760	-482	4278	*** 0.000
Real wage rate [CHF/h]	10.0		3.8	19.5	15.7	*** 0.000

Farmland in ha	25.3	19.3	33.1	13.9	*** 0.000
Milk yield [kg/cow/year]	6388	6236	6573	337	** 0.002

1 CHF = 8.2 NOK = 0.86 EUR

Source: Hoop et al., 2017





Growth

- Survey on dairy farms in Eastern Switzerland in 2006/7 (end of quota removal: 2009)
- Only 17% had no growth intention (base: farms intending to stay in dairy at least at medium term)
- Obstacles for growth (base: farms intending to stay in dairy at long term):
 - 21% no obstacles
 - 39% no land available
 - 17% costs for growth are too high
 - 10% full barn
 - 13% other obstacles



Cooperation

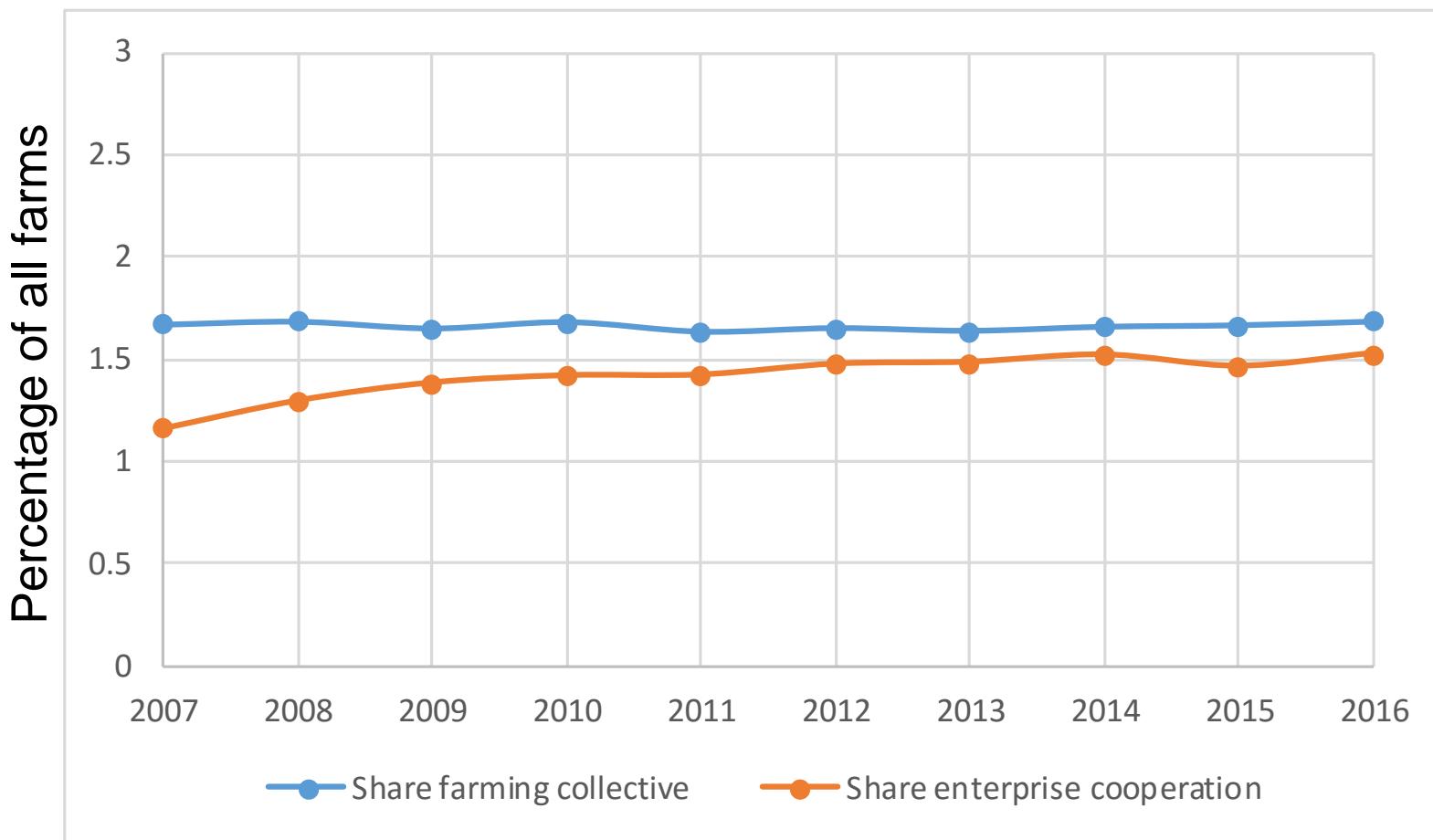
- Swiss farmers are involved in cooperation:
 - 53% hire contractor
 - 36% have common machines
 - 27% carry out machine services for others
 - 18% are involved in machine cooperatives
 - 5.4% are involved in enterprise/production branch cooperation
 - 4.2% are involved in farming collective (full cooperation)



Source: Lips et al., 2009



Recent development of cooperation



Source: Office of Agriculture



Crop rotation cooperation

- Background: A balanced crop rotation is a precondition for direct payments (e.g. wheat, maize grain, beans).
- In a crop rotation cooperation all farmers
 - bring their arable land in.
 - may merge small field to larger fields.
 - establish together a crop rotation.
- Crop rotation cooperation are both relatively easy to establish and relatively easy to resolve.
- Nevertheless, they are seldom applied.



Image of cooperation

- Survey about attitudes towards cooperation
 - 347 farm manager
 - 132 apprentices (agriculture)
- Weakness of cooperation
 - Fear of interpersonal conflicts
 - *Farmers involved in farming collectives show above average communication skills.*
 - Dependency/ Loss of independence
 - Risk of failure
 - Potential gaps in cooperation contract
 - Too complicated



Job preferences of dairy farmers

- Research question: Do dairy farmers have non-pecuniary or non-financial job preferences?
- The survey on dairy farms in Eastern Switzerland in 2006/7 included also a discrete choice experiment.
- 300 complete data sets are available.
- Estimation of a random utility function by means of a mixed effects-logit model



Discrete Choice Experiment

Attributes	Levels
Work content	<ul style="list-style-type: none">• Dairy production (<i>status quo</i>)• Suckler cow husbandry plus additional employment• Farming without cattle• Outside agriculture
Terms of employment	<ul style="list-style-type: none">• Self-employed (<i>status quo</i>)• Employed
Leisure time	<ul style="list-style-type: none">• Hardly a weekend or hardly a week's holiday• 12 weekends or 2 weeks• 52 weekends or 4 weeks
Variation in income per year	<ul style="list-style-type: none">• CHF -6,000.-• CHF 0.- (<i>status quo</i>)• CHF +15,000.-• CHF +30,000.-

1 CHF = 8.2 NOK = 0.86 EUR

Source: Lips et al., 2016



Results

Levels	in CHF	Standard Error	95% Confidence Interval	
Suckler cow + add. emp.	52,864	5,537	42,012	63,715
Without cattle	45,755	4,926	36,100	55,410
Outside agriculture	53,807	5,318	43,384	64,230
Employed	32,340	4,809	22,915	41,765
Holidays, 1 week	-7,369	1,029	-9,386	-5,352

- Annual on-farm income of a full-time family work unit: CHF 34'500.-
- The preference of being self-employed or independent has the same size as the annual income.



Independence: Livestock builings

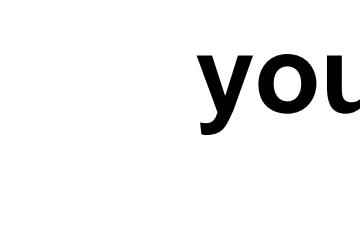




Independence: Machines (hydraulic loaders)



Thank you for
your attention





Literature

- Agroscope, several years. Grundlagenbericht, Ettenhausen.
- Gazzarin, C., Ammann, H., Schick, M., Van Caenegem, L. & Lips, M., 2005. Milchproduktionssysteme in der Tal- und Hügelregion, Was ist optimal für die Zukunft? *FAT-Bericht* Nr. 645.
- Gazzarin, C., Bloch, L., Schneitter, O. & Lips, M., 2008. Wie reagieren Verkehrsmilchbetriebe auf die aktuellen Herausforderungen? Eine repräsentative Umfrage in der Ostschweiz vor Aufhebung der Milchkontingentierung, *ART-Bericht* Nr. 698, Ettenhausen.
- Hoop, D., Spörri, M., Zorn, A., Gazzarin, C. & Lips, M., Kapitel 4, Wirtschaftlichkeitsrechnungen auf Betriebszweigebene, in Wirtschaftliche Heterogenität auf Stufe Betrieb und Betriebszweig, p.61-77. IN Lips, M., (Ed.) 2017. Wirtschaftliche Heterogenität auf Stufe Betrieb und Betriebszweig, Agroscope Science Nr. 53, Ettenhausen.
- Lips, M., Pulfer, I. & Jucker, F., 2009. Kooperationsformen mit einfachen Ausstiegsmöglichkeiten, *ART-Bericht* Nr. 706.
- Lips, M., Gazzarin, C. & Telser, H., 2016. Job Preferences of Dairy Farmers in Eastern Switzerland: A Discrete Choice Experiment, *German Journal of Agricultural Economics*, 65(4): 254-261.
- Pulfer, I., 2007. Das Image von Betriebsgemeinschaften, Befragung von Betriebsleiterschülern und einer repräsentativen Stichprobe von Deutschschweizer Bauern, *ART-Bericht* Nr.692, Ettenhausen.