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MOUNTAIN FARMING IN AUSTRIA

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ABSTRACT

For decades, the mountain regions in Austria have been of regional, social, environmental and economic relevance. The European Union has ranked them among the most disadvantaged areas for agriculture. Nevertheless, in mountainous regions, 'disadvantaged' is not synonymous with marginal. On the contrary, agriculture is central to mountainous regions. In Austria the mountain area makes up 70% of national territory and 50% of the utilised agricultural area. Mountain agriculture is largely family farming. It is as diverse as the myriad mountain landscapes available, but at the same time, there are also commonalities to farming in lowland regions. With this in mind the research questions are: (i) what are the characteristics of family farming in mountain regions and (ii) how do they differ from agriculture in lowland regions? Following some definitive remarks on family farming and the classification of mountain regions, this paper outlines the situation in Austria using select key indicators from the agri-structural data of the Integrated Administration and Control System and income data, 2014. Next, certain characteristics are highlighted using select data from the survey 'Life and working conditions of female farmers in Austria' conducted in the year 2016. When analysing the agriculture in mountain and lowland regions we employed descriptive statistics. Based on the findings, we try to give some suggestions on the need for further research and on future perspectives for both mountain and lowland agriculture.

Keywords: *Agriculture, lowland regions, mountain regions, Austria*.

INTRODUCTION

Austria is a mountainous country. Mountain areas and mountain farming are of great national importance. Mountain farming in Austria has a good image and a clear backing in the population and in politics (at least at regional and rural level) (Hovorka, 2011). The mountain area makes up 70% of the national territory and 50% of the utilised agricultural area (Hovorka, 2017). Mountain farming is confronted with great natural constraints (climate, topography, etc.). In Austria farms are classified according to their constraints as groups of the register for mountain farms (Hovorka, 2017; Tamme et al., 2002). Austria also has one of the highest proportions of mountain areas within the European Union. Mountain

farming has a European dimension and is, therefore, of European interest as a living, economic, recreational and biodiversity area (see also Alpine Convention, Carpathian Convention, etc.). Furthermore, this issue has also been addressed at the Rio Earth Summit 1992: focusing on the proper management of mountain resources and socio-economic development of the people deserves immediate action (United Nations, 1992, Agenda 21, Chapter 13: "Managing Fragile Ecosystems – Sustainable Mountain Development") (Hovorka, 2004). In fact, mountain farming has been looked at from many different global perspectives: (i) analysing the existence of positive externalities (Cobbing and Slee, 1993; Dax and Hovorka, 2012), (ii) assessing the impacts of climate change on biodiversity and agriculture in mountain regions (Diaz, Bradley, Ning, 2014; Huber et al., 2005), (iii) as the testing ground for different institutional solutions for property and resource management (Gurung and Banskota, n.d.; Pandit and Thapa, 2004; Turkelboom et al., 2004), (iv) evaluating the importance of incentives and policy measures (European Network for Rural Development Contact Point, 2009; Hovorka, 2014, 2017) and (v) hypothesising on the future of farming in the Alps (Flury et al., 2004; Flury et al. 2013; Frey, 2006; Schermer and Kirchengast, 2007). While official agricultural statistics give a very good image of the farm and production characteristics of mountain and lowland farming we know little about the living and working situations of female farmers in mountain and lowland regions. However, the present state-of-the-art analysis, which deals with the current situation, largely neglects the long-term attractive forces and interregional shifts in these forces. Against this background we shall provide some statistical evidence on the nature of farming in mountain and lowland regions. After clarifying the definitions (family farming, mountain and lowland regions) and methods applied we analyse select structural data from the Integrated Administration and Control System (IACS) and the farm income data (BMLFUW, 2015) of the year 2014 as well as data from the survey of female farmers in 2016 in order to answer the following research questions: (i) what is the significance of the mountain farming? (ii) What are the characteristics of mountain farming? (iii) How does this differ from farming in lowland regions? This can give us further insights into the continuing development of farming as a whole and emerging research needs.

MATERIAL AND METHODS

The analysis presented in this paper refers to the areas designated as mountainous less favoured areas according to Article 18 of Regulation (EC) No 1257/99 (European Communities, 1999). In Austria we distinguish between farms with and without constraints. The former are mountain farms and the latter farms in lowland regions. The classification is done according to the groups of the register for mountain farms (Tamme et al., 2002). To obtain a picture of farming in Austria the structural features of IACS data (BMLFUW, 2014), income data (BMLFUW, 2015) and select data from the survey of female farmers throughout Austria were analysed. The agricultural population/sample data was obtained from the Austrian IACS farm data set 2014 where farm operators had (i) the legal status of natural

person or group person (two families or marriage relationship without community pastures and cooperatives), and an email address. These farms are family farms (Böhme, 2013). The agricultural population overall was 116,615 and the study population for the survey was 36,573 farms. The survey was conducted as an online-questionnaire. 2,200 questionnaires from female farmers in the rural areas and demi-town could be used after a quality test (consistency check) for the analysis of the research questions. The response rate was 7% of the net sample. The data thus collected was analysed by using Statistical Package for Social Sciences (SPSS) for reporting results and drawing conclusions.

RESULTS AND DISCUSSION

Density and farm characteristics

As shown in Table 1 there is no difference between the farming in mountain and lowlands regions regarding the legal forms marriage relationship and group holding. Significant differences were found as follows: (i) more people live in lowland regions, (ii) more farms are full-time farms, (iii) there are more farms managed by farmers in mountain regions, (iv) the proportion of ecological farms is higher, (v) farms are smaller and have less livestock units (LSU) per hectare utilised agricultural area (UAA), and (vi) the income from agriculture and forestry is lower.

Table 1. Select density and farm characteristics of mountain and lowland regions.

Density and farm characteristics			Lowland region	Mountain region
Population density in population per sqkm**			84	48
Full-time farms**			47%	53%
Legal form	Natural person*	male	49%	53%
		female	28%	26%
	Marriage relationship		17%	17%
	Group holding		6%	4%
Ecological farms**			10%	24%
Ø hectare of UAA per farm**			24	17
Ø number LSU per 100 hectare UAA**			106	62
Ø number of RGVE per 100 hectare UAA**			103	37
Income from agriculture and forestry in euro per unpaid labour**			21,934	16,531

Source: IACS data 2014; BMLFUW 2015, ** statistically highly significant ($p < 0.01$), * statistically significant ($p < 0.5$).

Activities characteristics

The production activities can be characterised in Table 3 as follows: Milk production, suckler cows and forestry are more important in mountainous than in lowland regions. The production of cash crops, pig farming, vegetables, fruit and vines have a significantly higher share as the most important area of operation in

lowland regions. This is also confirmed by the structural data in the Green Report (BMLFUW, 2015) and the Farm Structure Survey (Statistik Austria, 2013).

Table 2. Select activities characteristics by female farmers of mountain and lowland regions.

Activities characteristics		Lowland region	Mountain region
Most important area of operation**	Milk production	16%	40%
	Production of cash crops	22%	2%
	DM, HoF, Heuriger etc.	9%	12%
	Suckler cows	5%	13%
	Other animals	10%	11%
	Pig farming	9%	1%
	Vegetables, fruit and vines	15%	1%
	Forestry	4%	11%
	Cattle fattening	4%	6%
	Other	7%	4%
Additional activities		52%	48%
of which	Direct marketing**	30%	22%
	Holiday on farms**	24%	10%
No off farm job of the female farmer**		60%	66%
No off farm job of the partner**		49%	43%

Source: Survey of female farmers 2016 (lowland regions n = 1,140 and mountain regions n = 1,060), Direct marketing (DM), Holiday on Farms (HoF), ** statistically highly significant ($p < 0.01$).

Furthermore, additional activities are more present in lowland regions. In detail, direct marketing and holidays on farms are significantly more attractive for female farmers in the lowland regions than in mountain ones. 33% of the female farmers work off the farm in lowland regions and 23% in mountain regions. The proportion of the partner having an off farm job is definitely higher. In lowland regions 51% of the partners work off-farm and in the mountain regions 57% of them do

Family characteristics

The family characteristics in Table 3 show that there is no significant difference between the farming in lowland and mountain regions when looking at the average number of people and children on the farm, the marital status and the transfer of the farm regulated. Definitely, compared to the lowland regions (i) there are more farms with adult children in mountain regions, and (ii) there are also fewer farms that have no children or children requiring care.

Table 3. Select family characteristics by female farmers of mountain and lowland regions.

Family characteristics		Lowland region	Mountain region
Ø number of people on the farm		4.9	5.1
Ø number of children per female farmer		2.5	2.6
of which farms with	adult children*	47%	53%
	children requiring care*	45%	43%
	childless*	8%	5%
Marital status	marital cohabitation	83%	85%
	extra-marital cohabitation	9%	7%
	single	8%	8%
Transfer of the farm regulated		29%	31%

Source: Survey of female farmers 2016 (lowland regions n = 1,140 and mountain regions n = 1,060), * statistically significant ($p < 0.5$).

Assessment characteristics

Looking at the assessment characteristics in Table 4 shows that more female farmers in mountain regions consider themselves as profession female farmers than their counterparts in lowland regions do. Also in the mountain regions more respondents would become a female farmer again. No significant difference is shown for the assessment of the female famers' image towards other professionals and the evaluation of the current situation of agriculture and forestry as well as the future of the farm.

Table 4. Select assessment characteristics of female farmers of mountain and lowland regions.

Assessment characteristics		Lowland region	Mountain region
See themselves as a professional 'female farmer'**		67%	77%
Would become a female farmer again**		69%	78%
Option of Image of female farmers towards other professionals	somewhat higher	5%	4%
	equal	30%	29%
	somewhat lower	67%	67%
Assessment of the current economic situation of agriculture and forestry	very good	0%[#]	1%[##]
	good	17%	16%
	poor	57%	58%
	very poor	26%	25%
Assessment of the future development of the farm	very good	3%	3%
	good	51%	53%
	poor	37%	37%
	very poor	9%	7%

Source: Survey of female farmers 2016 (lowland regions n = 1,140 and mountain regions n = 1,060), ** statistically highly significant ($p < 0.01$). #Lowland regions (0.2%), ##mountain regions (0.5%)

CONCLUSIONS

A mixed picture of mountain and lowland agriculture emerges from the analysis. Agriculture and its related activities remain key components of the mountain rural economy and of land use in mountain areas. Mountain farming has an excellent record for using the land for milk production and forestry. The farming is less intensive (number of ecological farms, LSU). The farms are smaller. The income from agriculture and forestry per unpaid labour is lower. More female farmers consider themselves as professional female farmers and would become a female farmer again. These may also be one of the reasons more partners work off-farms and more female famers remain at home. Mountain farming does however face specific permanent handicaps which limit its capacity to adapt and rationalise its economic activity. However, natural constraints have not resulted in a state of inflexibility or disillusionment regarding the future of mountain farms. Mountain famers evaluate the future of their farms similar to lowland farmers. Given this optimism there is clearly a potential for development which could be innovative with the right change in framework conditions. Currently, in the discussion about the future of mountain farming there are two pertinent concepts, namely agricultural industrialisation and the development path of a European agricultural model of multifunctional agriculture. In view of this, there is a need for the following further research: (i) gleaning more information about future developments by looking at structural developments in the past, (ii) exploring the different approaches to sustain the agricultural production potential, (iii) the future of mountain farming for enhancing food security, alleviating poverty, and contributing to environmental and welfare issues, (iv) approaches and partners for an inclusive food value chain for the produce from mountain farms, and (v) greater clarity is needed on the extent of female farmers' involvement in mountain farming as well as on the economic and cultural factors determining the specific forms that their involvement takes.

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