

## Farming in Austria: rural areas versus demi-towns

## Rolnictwo w Austrii: obszary wiejskie vs półmiejskie

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**Abstract.** In recent decades the farming areas in Austria have been affected by a variety of phenomena. The interplay of individualisation, globalisation, segregation, suburbanisation and deindustrialisation has been shaping a new type of area which is neither urban, nor rural: the “Zwischenstadt”, a sort of demi-towns. In addition to rural areas, the demi-town could become an area of significance for farming especially in Austria, Europe and the industrialised countries, if it has not already been the case for a long time now. With this in mind the research questions are: 1) what is the significance of the demi-town for farming? 2) What are the characteristics of demi-town farming? 3) How does this differ from farming in rural areas? This contribution starts with the concepts of demi-towns and rural areas and their relationship to farming. The definition of the European Commission is used, where the area of intermediate density (towns, suburbs) is considered as a demi-town and rural area is defined as a thinly-populated area. We then outline the status quo in Austria by using select key indicators from the agri-structural data of the Integrated Administration and Control System (IACS), 2014. Next, certain characteristics of farming in rural areas and the demi-town 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 characteristics and differences between the demi-town and the rural area we employed descriptive statistics. The differences between farming in the demi-town and rural areas can be summarised as follows: In the demi-town, there live 5.6 times more people per square kilometer than in rural areas. In the demi-town there are 5.7 times less utilised agricultural area and 5.6 times less live-stock units per capita available. For this reason the standard output is 5.0 times smaller. This notwithstanding, additional activities are more prevalent in the demi-town. Female farmers as well as their partners are more often employed off-farm and fewer female farmers consider themselves as professional female farmers. These findings bring into focus the need for further research regarding: 1) the functioning of rural and demi-town farming within the food system, 2) the contribution to the welfare of communities in rural areas and in the demi-town, 3) the demand of people in the demi-town for multiple functions and the values attributed to farming and 4) the role of teamwork (between e.g. people, organisations, governmental and non-governmental bodies) in sustaining the vision for inclusive farming in demi-towns. This will help reveal the innovative potential of

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(mini) farming in demi-towns. Nevertheless, the issues raised in this contribution need to be closely linked to Austrian and European agricultural and regional policy to ensure an inclusive and sustainable development.

**Keywords:** farming • rural areas • demi-towns • Austria

**Abstract.** W ostatnich dziesięcioleciach obszary rolne w Austrii ulegały oddziaływaniu licznych zjawisk. Procesy indywidualizacji, globalizacji, segregacji, suburbanizacji i dezindustrializacji kształtują nowy typ obszarów, które nie są ani obszarami miejskimi, ani wiejskimi, tworząc tzw. „międzymieście” (Zwischenstadt) rodzaj ‘pół-miast’ czy też ‘miejskiej wsi’. Tego rodzaju obszary, zwłaszcza w Austrii, Europie i krajach uprzemysłowionych, mogą pełnić istotne funkcje rolnicze, co w wielu regionach znajduje potwierdzenie już od wielu lat. W kontekście powyższych założeń, pytania badawcze postawione w niniejszym tekście brzmią: 1) Jaką rolę w rolnictwie odgrywają obszary ‘półmiejskie’? 2) Jak można scharakteryzować obszary ‘półmiejskie’ 3) Czym różni się rolnictwo na obszarach ‘półmiejskich’ od rolnictwa na obszarach wiejskich? Niniejszy artykuł przybliża koncepcję ‘pół-miast’ i obszarów wiejskich w kontekście działalności rolniczej. Zgodnie z definicjami sformułowanymi przez Komisję Europejską, obszary o umiarkowanej gęstości zaludnienia (miasto, przedmieścia) uznawane są za ‘półmiejskie’, a obszary wiejskie określane są, jako słabo zaludnione. Status quo dla Austrii nakreślono w oparciu o wybrane, kluczowe wskaźniki opisujące strukturę agrarną, które pozyskano ze Zintegrowanego Systemu Administracji i Kontroli (Integrated Administration and Control System, IACS), 2014. Pewne charakterystyki rolnictwa na obszarach wiejskich i ‘półmiejskich’ sformułowano w oparciu o dane zawarte w raporcie „Życie i warunki pracy rolniczek w Austrii”, który sporządzono w roku 2016. Dla celów analizy różnic pomiędzy ‘pół-miastami’ i obszarami wiejskimi zastosowano statystyki opisowe. Różnice pomiędzy rolnictwem w ‘pół-miastach’ a na obszarach wiejskich można podsumować w następująco: W ‘pół-miastach’ żyje 5,6 razy więcej osób w ujęciu na kilometr kwadratowy, niż na obszarach wiejskich. W ‘pół-miastach’ mamy do czynienia z 5,7 razy mniejszym obszarem użytków rolnych i 5,6 mniejszą ilością pogłowia zwierząt w ujęciu na osobę. Dlatego też standardowa produkcja jest tam 5.0 razy mniejsza. Jednocześnie, dodatkowa działalność gospodarza jest bardziej rozpowszechniona w ‘pół-miastach’. Zarówno rolniczki, jak i ich partnerzy częściej zatrudnieni są poza gospodarstwem rolnym i mniej kobiet postrzega same siebie, jako profesjonalne rolniczki. Ustalenia te formułują obszar dla dalszych badań w zakresie: 1) funkcjonowania obszarów wiejskich i półmiejskich w systemie żywności, 2) wkładu w dobrobyt wnoszonego przez wspólnoty wiejskie i półmiejskie, 3) popytu zgłaszanego na obszarach półmiejskich na rozmaite funkcje i wartości przypisywane rolnictwu oraz 4) roli współpracy (pomiędzy przykładowo ludźmi, organizacjami, podmiotami rządowymi i pozarządowymi) na rzecz równoważenia wizji rolnictwa inkluzywnego na obszarach półmiejskich. Realizacja badań w powyższych obszarach pomoże ujawnić innowacyjny potencjał (mini)rolnictwa na obszarach półmiejskich. Niemniej jednak kwestie poruszone w niniejszym tekście muszą pozostać w ścisłym związku z założeniami austriackiej i europejskiej polityki rolnej i regionalnej, by gwarantować inkluzywny i zrównoważony rozwój.

**Słowa kluczowe:** rolnictwo • obszary wiejskie • obszary półmiejskie • Austria

## Introduction

Urbanisation is increasing worldwide. Urban growth (cities, towns, suburbs etc.) takes place in non-built-up areas first of all at the expense of farmland (Munton, 2009). Productive agricultural land is, therefore, lost, and the number of farms decreases (EEA, 2006; Poppe et al., 2005). This phenomenon is accompanied by a growing demand for food that raises the problem, not only in urban areas, of securing food and nutritional supplies (Drechsel, Quansah, Penning de Vries, 1999; Griffon, 2003; van Veenhuizen, 2006). Given this background, researchers and planners are increasingly focusing on the role of farming in rural areas (Fuller, 1990; Mardsen and Sonnino, 2008; Rigg, 2006) and growing urban spaces (Bryant and Johnston, 1992; Bryant, 1997; Mougeot, 2000; Bontje, 2001; van Veenhuizen, 2006) and the productivity of agricultural areas close to towns (Bricas and Seck, 2004; Temple and Moustier, 2004; Moustier and Danso, 2006; Weinberger and Lumpkin, 2007).

The manner in which spatial planning looks at this phenomena classifies it into three degrees of urbanisation, namely cities (densely populated areas), towns and suburbs (intermediate density areas) and thinly populated areas or rural areas (Eurostat, n.d.). In literature towns and suburbs are also called “Zwischenstadt” (Sievert, 1997), a sort of demi-towns – other terms used in this connection are postsuburbia (Kling, Olin, Poster, 1991; Phleps et al., 2006) and peri-urban (Adell, 1999; Simon and McGregor, 2012). Demi-towns are considered as a transitional zone between urban and rural areas. Demi-town areas in Austria and elsewhere have been subject to agricultural and land use research for the past decades (Adell, 1999; Tacoli, 2001) and have prompted much public and policy interest (Baker et al., 2012; Erickson et al., n.d.; Losada et al., 2015). Farming in demi-towns is a kind of urban farming. Urban farming is defined shortly as the growing of plants and the raising of animals within and around cities (RUAF Foundation, n.d.).

However, the present analysis, which deals with the current situation, largely neglects the long-term attractive forces and interregional shifts in these forces. Official agricultural statistics give a very limited image. Qualitative research has shown that statistics do not always capture the breadth of women’s farm work. Supplementing these statistics with the representative survey of female farmers give a more comprehensive picture on the farming situation in the areas looked at. In this contribution we shall provide some statistical evidence on the nature of farming in rural areas and the demi-town. This paper questions the specificity of the farming in the area of the demi-town and compares it with that of rural areas. We reinvestigate the role of farming for society at large by looking at these two territories. After clarifying the definition for demi-towns and rural area, we first of all, however, analyse select structural data as available from the Integrated Administration and Control System data (IACS) of the year 2014 and data from the survey of female farmers in 2016 in order to answer the following research questions: (1) what is the significance of the demi-town for farming? (2) What are the characteristics of demi-town farming? (3) How do these differ to those of farming in rural areas? This can give us insights into future development of farming as a whole, the innovative potential of the demi-town and emerging research needs.

## Material and methods

This contribution was designed to qualify and/or quantify the characteristics of farming in rural areas and in the areas of the demi-town. In order to get a picture of farming in Austria structural features of IACS data (BMLFUW, 2014) and selected data from the survey of female farmers throughout Austria are analysed. This is broken down into farming in rural areas and in the demi-town. The agricultural population/sample data was obtained from the Austrian IACS farm data set of 2014 where farm operators had (i) the legal status of natural person or group person (without community pastures and cooperatives). For the online survey a further criteria was an email address. The agricultural population overall was 115,953 and the study population for the survey was 35,460 farms. The survey was conducted as an online-questionnaire in 2016. After a quality test (consistency check) it was possible to use 2,182 questionnaires from female farmers in the rural areas and demi-towns for the analysis of the research questions. The response rate was 7% of the net sample. The data thus collected was analysed using Statistical Package for Social Sciences (SPSS) for reporting results and drawing conclusions.

## Results and discussion

The quantity of farming in an area determines the current and future status of its services for human life. For the purposes of depiction a set of indicators has been applied as follows. We start with the density characteristics (population density, number of farms per capita, proportion of utilised agricultural area (UAA) over total area, livestock units (LSU) per capita and 100 hectares and standard output (SO) per capita). This is followed by the characteristics of farms (legal form, mountain farms, ecological farms and average UAA per farm) and production (most important area of operation, additional activities and off-farm jobs). To get a more realistic picture, we also look at the family characteristics, namely the average people on the farm, the children situation, the marital status and whether the transfer of the farm has already been regulated. This is followed by the whence and the whither, i.e. whether the female farmer or their partner has grown up on the farm and how female farmers assess the future of their farm. And finally, we look at the mental picture female farmers have of themselves. The questions are (1) whether they define themselves as female farmers, i.e. have the professional title female farmer, (2) whether they would choose again to become a female farmer and (3) how they assess the image of female farmers vis-à-vis other professions.

## Density characteristics

“For humans, population density is the number of people per unit of area, usually quoted per square kilometer” (sqkm) (Agbao, Englama, Philip-Ogph, 2014). In 2014, of the 7.59 million Austrian people 2.51 million were living in demi-towns and

3.27 million in rural areas. The demi-towns covered a total area of 9,969 sqkm and rural areas about 72,485 sqkm. 5.6 times more people were living in the demi-towns than in rural areas. The total area covered by rural areas was 7.2 times larger than that of the demi-towns. The rural area is characterised by its amount of total land, whereas the demi-town by its significantly higher population density, as shown in Table 1.

**Table 1.** Select density characteristics of rural areas and demi-towns

Density characteristics	Rural areas	Demi-towns
Population density per sqkm**	45	251
Number of farms per capita*	0.03	0.01
Share of UAA of total area	28%	31%
UAA in hectare per capita**	0.62	0.12
LSU per capita**	0.51	0.09
of which RGVE per capita	0.41	0.08
Ø number of LSU per 100 hectare UAA*	82	77
Ø number of RGVE per 100 hectare UAA	66	64
Ø SO in Euro per capita**	1.408	280

Source: IACS data 2014 (rural areas n = 101,196 and demi-towns n = 14,757),

\*\* statistically highly significant ( $p < 0.01$ ), \* statistically significant ( $p < 0.5$ )

In Austria, roughly 28% of the total area is UAA. The UAA refers to the land used for farming; it includes arable land, permanent grassland, permanent crops and also kitchen gardens (Eurostat, 2011). There are 2.04 million hectares UAA in rural areas and 0.30 hectare in the demi-town. Although the proportion of UAA in the demi-town (31%) is higher than in rural areas (28%), farming is more predominant in rural areas (Tab. 1). 1.91 million LSU are recorded in Austria of which 1.67 million are in rural areas and 0.23 million in demi-towns. In relative terms, there are 0.51 LSU per capita in rural areas and 0.09 in demi-towns. Farms in rural areas have 5.5 times more livestock, namely 82 LSU per 100 hectares compared to 0.09 LSU per 100 hectares in demi-towns. The main part of livestock is grazing stock or roughage-consuming animals (RGVE). The farming in demi-towns is predominantly less intensive regarding livestock density. In rural areas there are threetimes more farms per capita than in demi-towns and the UAA is five times as high as in the demi-town. Compared to rural areas the farming in the demi-town is less intensive when looking at LSU and SO (Euro) per capita. For example the SO per capita in the demi-town is one fifth of the one in rural areas.

This notwithstanding, the demi-town area still has agricultural potential, especially regarding the need for a certain agricultural self-sufficiency. Different approaches (urban gardening in the form of guerilla gardening, roof gardens, community gardens etc) which are very succesful already exist. They are based on intensive gardening techniques. Intensive gardening practices can reduce the amount of space required for the same nutritional content to 700 square feet plus another 700 square feet for crops

grown specially for composting. A special form is mini farming, as a holistic approach to small-area farming, that enables one to produce 85% of an average family's food on just a quarter acre (or 0.1 hectare). In contrast, the current agri-business practices require 30,000 square feet per person or three quarters of an acre (or 0.3 hectare) (Markham, 2010, p. 38).

Limitations due to population increases and changes in land use in Austria and around the world put pressure on agricultural land use. The quantity and quality of UAA and arable land not only in rural areas but also in the demi-town determine the current and future status of the agricultural commodities and food services for human life. Incentives can be given through the implementation of appropriate policies and technologies but also individual actions are important.

## Farm characteristics

As shown in Table 2 there is no significant difference between the farming in rural areas and demi-towns in the proportion of full-time farmers, in the legal form, in the number of ecological farms and the average hectare of UAA per farm. A significant difference is shown in the share of farms in the mountain areas. Generally, the larger share of mountain area and therefore the farms are found in rural areas.

**Table 2.** Select farm characteristics of rural areas and demi-towns

Farm characteristics		Rural areas	Demi-towns	
Full-time farms		55%	55%	
Legal form	Natural person	male	50%	53%
		female	27%	27%
	Marriage relationship		17%	15%
	Group holding		5%	5%
Farms in mountain areas**		65%	7%	
Ecological farms		18%	16%	
Ø UAA per farm in hectare		20	21	

Source: IACS data 2014 (rural areas n = 101,196 and demi-towns n = 14,757),

\*\* statistically highly significant ( $p < 0.01$ )

## Production and activities characteristics

The production (Tab. 3) can be characterised as follows: In both areas milk production is the most important area of operation, in the demi-town accounting for 29% and in rural areas for 35% of the farms. Clearly, however, the share in rural areas is significantly higher. The second most important area of operation is cash crops. This is the

case for 14% of farms in demi-towns and 11% in rural areas. Direct marketing, holidays on farms and Heuriger<sup>1</sup> are ranked third and 9% of farms in rural areas and 12% in demi-towns consider it as their most important area of operation. All other areas of operation have a contribution of less than 10%. Furthermore, there are also additional activities. Although less female farmers in rural areas than in demi-towns say that the additional activities are the most important area of operation, the female farmers in the demi-town (56%) undertake more additional activities than in rural areas (49%). Going into more detail, direct marketing and holidays are more attractive for female farmers in rural areas than in the demi-town. Additional activities are one way to gain extra income, another one is off-farm jobs. In rural areas both the female farmers and their partners are more engaged on the farm than in the demi-town. 35% of the female farmers work off the farm in rural areas and 40% in the demi-town. The proportion of the partners having an off-farm job is definitely higher. In rural areas 52% of the partners work off-farm and in the demi-town 58% do.

**Table 3.** Select production and activities characteristics by female farmers in rural areas and demi-towns

Production and activities characteristics		Rural areas	Demi-towns
Most important area of operation*	Milk production	35%	29%
	Production of cash crops	11%	14%
	Direct marketing, holidays on farms, Heuriger <sup>1</sup> etc.	9%	12%
	Suckler cows	11%	9%
	Other animals	8%	8%
	Pig farming	6%	6%
	Vegetables, fruits and vines	6%	6%
	Forestry	6%	4%
	Cattle fattening	5%	4%
	Other	4%	5%
Additional activities**		49%	56%
of which	Direct marketing	31%	22%
	Holidays on farms	14%	11%
No off-farm job of the female farmer*		65%	60%
No off-farm job of the partner*		48%	42%

Source: Survey of female farmers 2016 (rural areas n = 1,868 and demi-towns n = 314),

\*\* statistically highly significant (p < 0.01), \* statistically significant (p < 0.5)

1 The word “heuriger” means “this year’s”. Traditionally the winemaker would invite “neighbours” round to taste the new wine. The latter would bring cold foods. Nowadays, this has changed into a more formal restaurant/cold buffet where the house wine is served. Obviously, there are a corresponding number of licence regulations.



## Family characteristics

The family characteristics in Table 4 show that there is no significant difference between the farming in rural areas and in demi-towns when looking at the average number of people on the farm, the children situation and the marital status. Definitely, the transfer of the farm is more regulated in the rural areas than in the demi-town. This is maybe due to the fact that there are more job opportunities in the demi-town.

**Table 4.** Select family characteristics by female farmers of rural areas and demi-towns

Family farm characteristics		Rural areas	Demi-towns
Ø number of people on the farm		5.2	5.3
Ø number of children per female farmer		2.4	2.3
of which farms with	adult children	45%	43%
	children requiring care	49%	53%
	childless	6%	4%
Marital status	marital cohabitation	86%	85%
	extra-maritalcohabitation	7%	9%
	single	7%	6%
Transfer of the farm regulated**		30%	23%

Source: Survey of female farmers 2016 (rural areas n = 1,868 and demi-towns n = 314),

\*\* statistically highly significant (p < 0.01)

## The whence and the whither characteristics

When looking at the origins of female farmers and their partners, we see, as shown in the Table 5, a significant difference. In rural areas more female farmers and more partners have their roots in farming, i.e. grew up on a farm, than in the demi-town area. Regarding the perceived prospects on the future of the farm, the positive assessment is nearly the same, i.e. no statistically significant difference.

**Table 5.** Select whence and whither characteristics of female farmers of rural areas and demi-towns

The whence and the whither characteristics	Rural areas	Demi-towns
Female farmer grown up on farm**	70%	60%
Partner grown up on farm*	90%	86%
Very good or good future for the own farm	43%	45%

Source: Survey of female farmers 2016 (rural areas n = 1,868 and demi-towns n = 314),

\*\* statistically highly significant (p < 0.01), \* statistically significant (p < 0.5)



## Self-assessment characteristics

Looking at the self-assessment characteristics – as shown in Table 6 – more female farmers in rural areas consider themselves as professional female farmers than their counterparts in the demi-towns. There is no significant difference shown in the answers to the question as to whether they would do it again and the assessment of the female farmers' image vis-à-vis other professionals.

**Table 6.** Selectself-assessment characteristics of female farmers of rural areas and demi-towns

Self-assessment characteristics		Rural areas	Demi-towns
Professional title 'female farmer'**		76%	68%
Would do it again?		74%	72%
Image of female farmers vis-à-vis other professionals	somewhat higher	5%	4%
	equal	28%	32%
	somewhat lower	67%	64%

Source: Survey of female farmers 2016 (rural areas n = 1,868 and demi-towns n = 314),

\*\* statistically highly significant ( $p < 0.01$ )

As shown in Tab. 1 to 6, the farming in the area of the demi-town distinguishes itself from that in rural areas as follows. In the demi-town (1) live more people but there are less farms, (2) the farming is less intensive according to LSU per hectare and LSU per capita, (3) the SO per capita is lower, (4) there are less mountain farms, (5) additional activities are more prevalent, (6) more female farmers and partners work off-farm, (7) the farm transfer is more regulated, (8) less female farmers, less partners have grown up on a farm and (9) fewer female farmers consider themselves as professional female farmers.

## Conclusions

Nowadays, farming in the demi-town and in rural areas is the result of an innovative adaptation to the pressure and opportunities attached to their geographical proximity to urban agglomerations. Although farming is more present in rural areas, the demi-town has a potential which is based on traditional farming.

## Status quo

Demi-town farming is now characterised by a heterogeneous pattern of farms with a certain agricultural production. This kind of farming contributes modestly to local food security, higher participation in additional activities, and low-intensive, part-time

farms. Nevertheless, becoming a 100% female farmer is a less attractive job opportunity, the majority have an off-farm job. The preservation and the multifunctional development of farming in the demi-town area, therefore, require a broad range of policy and planning measures. The demi-town needs to be recognised as an individual policy arena in order to overcome the urban-rural divide and strengthen urban-rural relationships. Agricultural policies and financial incentives should take into account a demi-town's differences to the rural countryside, and target development guidance at the situation within the border of urban and rural zones.

## Innovative potential

The growing urbanisation calls into question the future of demi-town farming with a view to enhancing urban food security, alleviating urban poverty, and contributing to cities' resilience to environmental and welfare issues. Against this background and in order to ensure the agricultural production potential: (1) every hectare available should be sustained for agricultural production, e.g. mini farming, (2) myriads of concepts of food-growing practices should be put into practise in a way that a certain inclusive degree of food self-sufficiency should be assured and (3) given that less farm transfers have already been regulated, the regulation of the transfer of family ownership to a third party should be seen as a potential option. Moreover, there is room for further innovation in the agricultural production of the demi-town. This innovation should deal with adapted and sound technology and know-how and marketing concepts within an inclusive food value chain.

## The way forward – future research

We must better understand how the rural and the demi-town farming work within the food systems. By doing so, we can comprehensively assess and promote the role of farming in the demi-town for the welfare of communities in rural areas and demi-towns. Furthermore, there is a reasonable demand among the demi-town public for multiple functions and values from farming. Environmental and landscape amenities, which directly contribute to the regional quality of life, are particularly highly valued. It will take a lot of work and commitment from a diversity of people, organisations, governmental and non-governmental bodies to sustain the vision for farming in demi-towns.

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