Erich Landsteiner / Tim Soens (Eds.)

Farming the City

Jahrbuch für Geschichte des ländlichen Raumes/Rural History Yearbook (JGLR/RHY)

Institut für Geschichte des ländlichen Raumes

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The Resilience and Decline of Urban Agriculture in European History

Resilienz und Niedergang der städtischen Landwirtschaft in der europäischen Geschichte

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Erich Landsteiner / Tim Soens

Editorial: Farming the City

At the beginning of the twenty-first century, urban agriculture is rapidly gaining importance.[1] All over the world, urban dwellers gather to cultivate crops and vegetables or to raise some poultry or pigs, often on a cooperative basis and on small plots of 'marginal' land. In an urban world characterised by globalising food markets and social polarisation – but also by increasing food insecurity –, citizens practice urban agriculture in a combined effort to diversify their food supplies, shorten the food chain and strengthen community life. Urban agriculture today is a highly diversified and multi-layered phenomenon, and its roots are both very old and very recent. Throughout European history it has appeared in different forms and guises. In some parts of Europe, urban agriculture seems to have declined at an early stage, whereas in others food production remained part and parcel of the urban economy until very recently, both as a component of a diversified household economy and in a highly specialised and professionalised form (for instance as horticulture or viticulture). Today, this urban agricultural heritage might offer inspiration to those who are looking for *low-tech* alternatives to high-precision and energy-intensive variants of urban agriculture like so-called vertical farms.[2]

It has already been noted that in most current discussions urban agriculture is treated as a new phenomenon and that this might have to do with its neglect in the prevailing historiography on towns and urbanisation.[3] Due to a long tradition, going back to the nineteenth century, of defining towns as "big non-agrarian settlements",[4] historians are indeed ill equipped to tackle the new challenge of providing a historical background to this societal

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1 This is also mirrored by research networks such as the COST (European Cooperation in Science and Technology) Action TD 1106 Urban Agriculture Europe (2012–2016), which has produced the "Barcelona Declaration on Urban Agriculture and the Common Agricultural Policy". See Frank Lohrberg et al. (eds.), Urban Agriculture Europe, Berlin 2015, and http://www.urban-agriculture-europe.org/files/130624_barcelona_declaration_on_urban_agriculture.pdf (last visited 2 Feb. 2020). On the global scale, the "Milan Urban Food Policy Pact and Framework for Action", launched in 2015 by FAO and signed by 167 cities from 63 countries, is a major initiative in this context. See Food and Agriculture Organization of the United Nations (ed.), The Role of Cities in the Transformation of Food Systems: Sharing Lessons from Milan Pact Cities, Rome 2018, http://www.milanurbanfoodpolicypact.org/wp-content/uploads/2018/10/CA0912EN.pdf (last visited 2 Feb. 2020).

2 See, for instance, the recent Herrenhausen Conference in Hannover on *Urban Agricultural Heritage and the Shaping of Future Cities*, 6–8 May 2019. A conference report is available under: http://www.ua-heritage.com/wp-content/uploads/2019/08/Conference-Summary_Urban-Agricultural-Heritage.pdf (last visited 2 Feb. 2020).

3 Ruth Glasser, The Farm *in* the City *in* the Recent Past: Thoughts on a More Inclusive Urban Historiography, in: Journal of Urban History 44/3 (2018), 501–518.

4 See, for a recent example of this approach to defining a 'town', Ferdinand Opll, Das Werden der mittelalterlichen Stadt, in: Historische Zeitschrift 280 (2005), 561–589, 564.

demand and the initiatives connected with it. Whatever else is marshalled in the numerous attempts to define a town and urbanity in European (or Western) historiography, especially when they are concerned with medieval origins, the functional difference between town and country is generally stressed.[5] The other criterion, intimately connected with the functional definition, is demographic and relies on a – unavoidably arbitrary – threshold of the number of inhabitants, usually set at 5,000 or 10,000 people.[6]

This functional cum demographic separation of town and country is, in both respects, a "deceptively simple dichotomy".[7] From the functional perspective, it necessarily neglects the involvement of towns, both large and small, in agriculture as well as the production and processing of agricultural goods and commodities by their inhabitants in the European past; from the demographic perspective it neglects the fact that a significant proportion of pre-modern European towns fell below the applied thresholds, relegating large parts of Europe to the status of non-urbanisation until the nineteenth century. This has not gone unnoticed. In his introduction to a volume on *Small Towns in Early Modern Europe*, Peter Clark stated:

> "Throughout the medieval and early modern period the small town, with a few hundred or thousand people, often clustered behind stone or earthen ramparts, with farms and orchards in its midst, and a handful of public buildings around the marketplace, was a constant and quintessential feature of the European landscape. […] Across Europe, there were five or more times as many small towns as all other kinds of urban community put together."[8]

Nevertheless, the functional and/or demographic definition of towns and urbanity continues to dominate the more synthetic accounts of the past constitutions of European towns and of economic development in general. It is, for example, widely used to estimate changes in

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5 To cite only two prominent authors: Henri Pirenne, Medieval Cities. Their Origins and the Revival of Trade, 3rd revised printing, Princeton 1939, 212: "If we wished […] to sum up its essential points in one phrase, perhaps it would be possible to say that the city of the Middle Ages […] was a commercial and industrial commune living in the shelter of a fortified enclosure and enjoying a law, an administration and a jurisprudence of exception which made it a collective, privileged personality." Susan Reynolds, English Towns in a European Context, in: Jörg Jarnut/Peter Johanek (eds.), Die Frühgeschichte der europäischen Stadt im 11. Jahrhundert (Städteforschung A 43), Köln/Weimar/Wien 1998, 207–218, 208: "My definition […] has two parts. The first part is functional: a town is a permanent and concentrated human settlement in which a significant proportion of the population is engaged in non-agricultural occupations […]. A town therefore normally lives, at least partly, off food produced by people who live outside it." Reynold's second criterion is the identity and the self-perception of the inhabitants of town and countryside. See also her study Kingdoms and Communities in Western Europe, 900–1300, 2nd ed., Oxford 1997, 155–158. A thoughtful discussion of the advantages and drawbacks of a purely functional definition is found in Stephan R. Epstein, Introduction. Town and Country in Europe, 1300–1800, in: idem (ed.), Town and Country in Europe, 1300–1800, Cambridge 2011, 1–29.

6 Jan de Vries, European Urbanization, 1500–1800, London 1984, after opting for a functional definition, set the threshold "for separating urban from rural places" at 10,000 inhabitants and is convinced that, "so long as the threshold level used for one of these criteria, population, is as high as 10,000 the others hardly need to be examined" (53). His other criteria are "population densities, percentages of the workforce in non-agricultural occupations and a measure of diversity in the occupational structure" (22).

7 Epstein, Introduction, 1.

8 Peter Clark, Introduction, in: idem (ed.), Small Towns in Early Modern Europe, Cambridge 1995, 1–21, 1; see also Epstein, Introduction, 1–2.

agricultural productivity by breaking down populations into urban, rural agricultural and rural non-agricultural, and then applying the urban ratios thus established to measure agricultural labour productivity over space and time.[9] It is highly significant that research on proto-industrial production has led to the differentiation of the rural population into agricultural and non-agricultural sections, whereas the urban population (identified by applying the usual size thresholds) is always – with some caveats of low significance – considered to be non-agricultural.[10] For the moment, it can only be surmised how the results of this kind of measurement would change if we lowered the demographic threshold to include the other four fifths of (small) towns into the urban ratio and split the urban population into agricultural and non-agricultural. Needless to say, this would be as arbitrary as splitting the rural population into these categories, considering the frequent combination of agrarian and non-agrarian occupations in town and countryside. It would certainly raise – perhaps even double – absolute urban ratios, especially for those regions where most towns were below the size threshold usually applied, but would it also change their relative standing with respect to more urbanised regions? Conversely, we could also ask to what extent the consideration of the weight of agricultural activities in the now more numerous towns would change the gaps in the estimates of regional agricultural productivity. It is far from clear that these sample changes would counterbalance and leave the results unchanged.[11]

Was the presence of agrarian occupations in towns simply a matter of size? Given the fact that a town of 10,000 inhabitants required about 9,000 hectares to secure its supply of bread grains in a preindustrial environment, there must have been limits of size to the self-sufficiency of towns in terms of food provisioning. Climbing up the size scale of towns, the interplay between urban food production and food markets tipped clearly in favour of the market.[12] However, we should, on the one hand, not underestimate the capacity of towns to cater for themselves given they had sufficient access to arable land. For a sample of twelve Swedish towns in the size bracket between 500 and 5,000 inhabitants, it has recently been calculated that their majority would, in theory, have been able to produce between 50 per cent and 100 per cent of the grain consumed in the respective town, up to and into the nineteenth century.[13] On the other hand, urban agriculture was – in many instances, also including small towns – not limited to food production by and for the townspeople, but rather dedicated to highly commercialised branches of agriculture.

Was the presence and extent of urban agriculture a matter of location? In the context of the overarching and evolving division of labour within Europe, the size, growth potential and functional specialisation of towns in manufacture and trade clearly declined from the

9 This method, originally devised by E. A. Wrigley, Urban Growth and Agricultural Change: England and the Continent in the Early Modern Period, in: Journal of Interdisciplinary History 15/4 (1985), 683–728, is further developed by Robert C. Allen, Economic Structure and Agricultural Productivity in Europe, 1300–1800, in: European Review of Economic History 3 (2000), 1–25.

10 See, for example, Allen, Economic Structure, 4: "Clearly, some people lived in small cities and cultivated the surrounding fields or grazed stock on meadows and commons. There is no easy way to estimate the number of urban farmers, but their number was small as is the error from assuming it was zero."

11 See Epstein, Introduction, 3 and 9, for a ponderation of similar questions.

12 See, for that matter, the contribution by Tim Soens in this volume.

13 Annika Björklund, Historical Urban Agriculture. Food Production and Access to Land in Swedish Towns before 1900 (Acta Universitatis Stockholmiensis 20), Stockholm 2010, 103–153, 135. See also the discussion of this matter for towns in Lesser Poland by Piotr Miodunka in this volume.

centre to the periphery. The economic constitution of the many Mediterranean, east-central European and Scandinavian agro-towns would then reflect the higher concentration and higher development of industry and merchant capital in the centre(s), and urban development and underdevelopment (if one associates the weight of agrarian production in towns with the latter) would constitute the opposite sides of the same coin. This conclusion has been stressed for some time in research on centre-periphery relations and certainly has merit, as long as one does not conflate urban agriculture with self-sufficient subsistence production and takes into consideration its often high degree of specialisation and commercialisation.[14] But even before the core of European urbanisation moved from southern to north-western Europe during the seventeenth century, in most Mediterranean towns, both large and small, the landownership of citizens and agricultural production for the household and the market constituted an important sector of the urban economy.[15]

Finally, we could ask if the relationship of towns and agricultural production is a matter of the type of farming and land use. Although the involvement of towns in agrarian production spanned a wide spectrum from small-scale food production for subsistence over market gardening to fully developed commercial farming, there seems to have existed an urban preference for market-oriented branches of agrarian production such as viticulture, hops and tobacco growing, cattle-raising, and the processing of agrarian raw materials oriented towards regional and supra-regional markets (wine making and beer brewing, the processing of dye-plants), often in close interaction with and based on the institutionalised coercive power of towns over the surrounding countryside.

In order to understand the organisation, resilience and failure of urban agriculture – broadly defined as all forms of food production in an urban context involving urban citizens as producers – this issue of the *Rural History Yearbook* aims to develop a comparative and long-term approach, with a particular focus on the actors involved in urban agriculture, their income strategies, and the social and economic configurations in which they operate. Most contributions to this special issue resulted from a double session at the 2017 Rural History Conference in Leuven (Belgium), organised by the Comparative Rural History Network (CORN). In this session and the special issue, the contributors were asked to reflect upon the drivers and actors explaining the long-term continuity of urban agriculture in some contexts and its rapid demise in others.

In his introductory article, *Tim Soens* elaborates a conceptual and methodological framework for the study of urban agriculture in the past, emphasising the role of demography, property rights, the organisation of the household economy, the commercialisation and spe-

14 For east-central Europe, see Maria Bogucka, The Towns of East-Central Europe from the Fourteenth to the Seventeenth Century, in: Antoni Maczak/Henryk Samsonowicz/Peter Burke (eds.), East-Central Europe in Transition. From the Fourteenth to the Seventeenth Century, Cambridge/Paris 1985, 97–108; Vera Bácskai, Small Towns in Eastern Central Europe, in: Clark (ed.), Small Towns, 77–89, and Jaroslaw Miller, Urban Societies in East-Central Europe, 1500–1700, Aldershot 2008, 197–235. For southern Europe, see Juan E. Gelabert, Cities, Towns and Small Towns in Castile, 1500–1800, in: Clark, Small Towns, 271–294, and Daniel Curtis, Is There an 'Agro-town' Model for Southern Italy? Exploring the Diverse Roots and Development of the Agro-town Structure through a Comparative Case Study in Apulia, in: Continuity and Change 28/3 (2013), 377–419.

15 Corrado Vivanti, Città e campagne, in: Ruggiero Romano (ed.), Storia dell'economia italiana, vol. 2: L'età moderna: verso la crisi, Torino 1991, 243–283.

cialisation of the 'agrarian' economy in the urban hinterland, the institutional framework and, finally, the role of crises (famine, warfare) disrupting normal food chains. *Roberto Leggero* and *Mirella Montanari* identify two different forms of development and resilience of urban agrarian production in northern Italy during the communal age by comparing the Piedmont cities of Chieri and Novara. Both cities had spaces of agricultural use within their walls and intensely regulated peri-urban agriculture, but developed specific relationships with their wider rural environment due to different ecological settings. Chieri, situated in a dry hill area, colonised her *contado* by planting vines and establishing small farm units cultivated by sharecroppers. Novara, on the plain traversed by the river Ticino, specialised in raising cattle on irrigated meadows. *Henry French* reminds us that towns, in his case 170 English towns, often possessed extensive commons. He explores the relationship between the agrarian and political governance of these urban common lands in the early modern period by pondering Elinor Ostrom's "Common Pool Resource" model against approaches stressing the unequal distribution of power within urban communities. French concludes that the longevity and eventual abolition of urban commons in England involved the assertion of the access rights of a privileged minority in the towns and its challenge by reforms designed to redistribute power through the expansion of corporate electorates.

Piotr Miodunka's paper addresses the agrarian features of the many small towns of south-western Poland, where agriculture was the primary source of income for the majority of inhabitants until the late nineteenth century. Drawing on the cadastral survey established by the government of Austrian Galicia in the 1780s, he analyses to what extent these towns were self-sufficient in their grain supply. *Pieter De Graef* and *Wouter Ronsijn* explore the entire spectrum of urban agriculture in the Flemish towns of Oudendaarde and Kortrijk in the nineteenth century through a micro-level approach using data on households from agricultural censuses, population registers and tax lists. In contrast to the situation in Polish towns, only about 10 per cent of the population of the much larger Flemish towns had access to agricultural land, which was very unequally distributed. The social continuum from home food growers to professional gardeners and farmers overlapped with a geographical continuum from urban core to rural fringe, stretching from small garden plots cultivated by self-provisioning households to produce vegetables and potatoes in the city centres to farms producing cereals and other crops as well as holdings of professional gardeners on the outskirts of the towns.

Ines Peper investigates the establishment and constitution of the mining company settlement Eisenheim in Germany's Ruhr district, where housing and access to land were provided by the company to attract and bind workers as well as to supplement their wages. She places this model of transition between traditional village and proletarian urban district within the context of similar projects, such as the settlements of the Moravian Church community in Herrnhut and other places, and the garden allotment initiatives and garden city projects in nineteenth century German towns, considering them as forerunners of many current projects of urban gardening. *Åsa Ahrland* presents a long-term perspective on the urban development of Södermalm island in Stockholm. In the course of the expansion of the Swedish capital, the island was transformed from an agrarian supply zone first into a gardening zone, where vegetables and tobacco were cultivated, then into an industrial district with a large working class population and allotment gardens, until it underwent gentrification at the turn to the twenty-first century. She identifies the establishment of the modern Swedish welfare state as the key to understanding why urban agriculture disappeared in Södermalm.

In *Erich Landsteiner*'s paper, vine-growing and wine production are discussed as specific forms of urban agriculture in late medieval and early modern (central) Europe. Refuting the implications of the concept of *Ackerbürgerstadt*, he investigates the economic and social characteristics of vine-growing towns by drawing on the examples of Vienna and Retz, a small town in Lower Austria, stressing the high degree of social differentiation, the endemic class-struggles between bourgeois vineyard owners and wage labourers, and the regulation of the wine market by the town authorities. *Johannes Koder*'s contribution on the provisioning of Constantinople with vegetables mirrored in the *Geoponica* is the only paper not presented in the session at the 2017 Rural History Conference in Leuven. It is included here as a very welcome extension of the geographical and chronological scope of this collection.

In the section for papers beyond the scope of the thematic issue, which we introduced only recently with the 2019 issue of the Yearbook, *Carine Pachoud* and *Markus Schermer* present a case study of the artisanal Serrano cheese value chain in Southern Brazil. The authors analyse strategies for building a resilient value chain by studying the role of social capital in the balance between maintaining traditions and the emergence of territorial innovations. Serrano cheese is produced by beef cattle farmers in the Campos de Cima da Serra region in the Brazilian states of Rio Grande do Sul and Santa Catarina. Pachoud and Schermer explore the historical development of cheese production in this area in relation to findings from their interviews with local actors conducted in 2017 and 2018. They observe that the recent creation of producers' associations which connect different actors through linking and bridging social capital was vital for territorial innovation to emerge. This study offers new perspectives on traditional food value chains in rural mountain areas that are often excluded from current discussions on globalised and production-oriented agriculture.

As editors of this special issue, we finally want to thank both the editorial board of the *Rural History Yearbook* and the peer reviewers for their valuable comments and suggestions, as well as the Comparative Rural History Network (CORN) for their support.

Tim Soens

Urban Agriculture and Urban Food Provisioning in Pre-1850 Europe: Towards a Research Agenda

Abstract: "Feeding the city" has been a prominent topic in historical literature for many decades. Most of this literature, however, remained based on the assumption that cities above a certain population level are essentially fed through the market, with rural agricultural surpluses being exchanged for the products of urban industry and trade. Stimulated by recent articulations of alternative ways of urban food provisioning, this article reconsiders the importance of urban agriculture in European towns before 1850 from the perspective of "urban food alternatives". The scattered evidence suggests that in many European towns a significant part of the urban population was directly involved in food production, but also that important differences persisted both between towns and between households in a town. While traditional interpretations – for instance, those linking urban agriculture with small towns, poverty, or the rise of commercial horticulture – fail to explain this spatial, social, and temporal variation, a better understanding of the success and decline of urban agriculture in different market configurations and in different social contexts might offer an important historical contribution to present-day debates on the viability and social dynamics of such urban food alternatives.

Key Words: urban agriculture, urban food supplies, horticulture, market gardening, famine

Introduction: reconsidering urban food provisioning in the past

How to feed a premodern city? For Henri Pirenne, founding father of European medieval history, the answer was quite simple: cities were based on industry and commerce, while food was produced in the countryside.[1] Hence city-dwellers were obliged to convert part of their income into food, for which they had a wide variety of markets and shops at their disposal. Six centuries before Pirenne, Ambrogio Lorenzetti, painter of the famous *Buon Governo* fresco in the Palazzo Pubblico of Siena, presented us with a similar picture of a bucolic, though hard-working, *contado* supplying the urban shops and markets with a perpetual flow of food. In

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1 Henri Pirenne, Histoire économique et sociale du moyen âge, 3rd ed., Paris 1963, 65.

neighboring Florence this was estimated to be 4,000 oxen, 60,000 sheep, 20,000 goats, 30,000 pigs, 25 million quarters of wine and 474,500 bushels of grain per year for a pre-Black Death population of about 110,000 inhabitants.[2] And yet a small detail in the cityscape of Lorenzetti's *Buon Governo* fresco reminds us that urban food supply might be more complex than the straightforward case of rural supply meeting urban demand at the market: within the city walls a man is herding a small herd of goats. Does the tiny scene represent the delivery of fresh meat from the surrounding countryside to the urban butchers? Possibly. However, the goats are clearly being guided towards the city wall, not the urban market. The goats remind us of the importance of animal life within the medieval city, as witnessed by their appearance in countless urban regulations and, increasingly, restrictions in an ever more complicated urban "environmental law".[3] One of the key goals of such regulation was precisely to manage the access to alternative forms of food supply that parts of the urban population enjoyed, thereby bypassing the market. Apart from animal husbandry, urban households might engage in horticulture, wine-growing, or even cereal cultivation. Also, these foods might be supplied by tenants or sharecroppers working a piece of land they owned in the countryside – in a city like Siena in the fourteenth century, urban households, and not just those of the elite, owned massive amounts of land in their *contado*.[4] In addition they might benefit from occasional or regular gifts of food distributed by charitable foundations, elite families supporting their retinue, confraternities sharing a meal, or close relatives making a testamentary bequest.

When focusing on the level of households, the history of urban food supply might be much more complex than food history allows us to believe. Since Fernand Braudel and other historians working in the tradition of the French Annales school started to investigate the material conditions of urban life in the 1960s, urban food supply automatically became a central issue in historiography. In an environment which was inspired by both Malthusian and Marxist models, food was about calories and class. It was considered in terms of access to staple foods like grain, beer, wine, and the like, which had to ensure the subsistence of the average city-dweller.[5] Feeding the city hence seemed above all a question of acquiring sufficient quantities of grain – and to a lesser extent, meat – and assuring that there were enough foodstuffs available even during difficult times such as those of harvest failure or war. Since Braudel, numerous studies have been published about the food supply of individual cities before 1800, in addition to the organisation of comparative roundtables.[6]

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2 Daniel Curtis, Florence and its Hinterlands in the Late Middle Ages: Contrasting Fortunes in the Tuscan Countryside, 1300–1500, in: Journal of Medieval History 38/4 (2012), 472–499, 475.

3 To cite but one example: Dolly Jørgensen, Running Amuck? Urban Swine Management in Late Medieval England, in: Agricultural History 87 (2013), 429–451.

4 Giovanni Cherubini, Signori, Contadini, Borghesi. Ricerche sulla società Italiana del Basso Medioevo, Florence 1974, 231–238.

5 Fernand Braudel, Civilisation matérielle, économie et capitalisme, XVe–XVIIIe siècle, vol. I, Paris 1979, 90–100.

6 Denis Menjot (ed.), Manger et boire au Moyen Age, Paris 1984; L'approvisionnement des villes de l'Europe occidentale au moyen âge et aux temps modernes (Cinquièmes Journées internationales d'histoire du centre culturel de l'Abbaye de Flaran, 16–18 septembre 1983), Auch 1985; Simonetta Cavaciocchi (ed.), Alimentazione e nutrizione, secc. XIII–XVIII. Atti della "ventottesima settimana di studi", 22–27 aprile 1996, Florence 1997; Antoni Riera I Melis et al. (eds.), Crisis frumentàries, iniciatives privades i polítiques públiques de proveïment a les ciutats catalanes durant la baixa edat mitjana, Barcelona 2013; Erik Thoen/Piet van Cruyningen (eds.), Food Supply, Demand and Trade. Aspects of the Economic Relationship between Town and Countryside (Middle Ages – 19th Century), Turnhout 2012.

Scholarship has usually distinguished between two basic strategies enabling such a massive transfer of food from the countryside to the hungry city: *coercion* (usually the coercive power of the "state") and the *market.* In European history, the importance of providing food to cities through coercion probably had its heyday in the *annonae* politics of the Roman Empire, when free grain distribution had to feed – and appease – the imperial capitals of Rome and, later, Constantinople.[7] Moreover, it was also a strong defining feature of the privileged position of Paris in the grain policies of Early Modern France[8] and in the close link between food supply and territorial expansion in Renaissance Venice.[9] On the other hand, the standard example of market-driven food provisioning is provided by the strategies of medieval London before 1300, as elaborated in the very influential "Feeding the City" project. Elaborating on von Thünen's model of concentric land use surrounding the "isolated city", Bruce Campbell, Derek Keene, and others were able to demonstrate how growing urban demand induced a gradual intensification of land use in an expanding hinterland, with supply and demand being matched through a relatively "open" market which included multiple buyers and sellers.[10] Research on other premodern cities arrived at similar results.[11] The demand-driven logic of the "Feeding the City" model was underpinned by the work of urban geographers explaining the gradual demise of food production near the built environment of the city: in a context of urban growth, higher bid-rents for residential and industrial land use inevitably pushed out agricultural and horticultural activities.[12] Explaining evolutions in urban food supply thus requires economic historians to be attentive both to the development of the coercive power of cities and their rulers, and to patterns of population densities and market integration.[13]

The dichotomy between a food-producing countryside and a food-consuming city is even more prominent in recent literature on "urban metabolism", which aims to map the continuous flows of energy, food, and raw materials imported from the hinterland and needed to sustain urban "life". Existing work on the urban food metabolism is based on two binary pairs of almost antagonistic categories: "town" and "hinterland", "consumption" and "production" – the so-called "metabolic rift".[14] Hence, metabolic thinking is intimately linked to commodification: food and other resources are processed as commodities and traded through or from the city.[15] From a metabolic view, urban growth is conceived as an expanding wave

7 Paul Erdkamp, The Grain Market in the Roman Empire: A Social, Political, and Economic Study, Cambridge 2005.

8 Steven Laurence Kaplan, Les ventres de Paris. Pouvoir et approvisionnement dans la France d'Ancien Régime, Paris 1988.

9 Fabien Faugeron, Nourrir la ville: ravitaillement, marchés et métiers de l'alimentation à Venise dans les derniers siècles du Moyen Âge, Rome 2014.

10 Bruce Campbell et al., A Medieval Capital and its Grain Supply: Agrarian Production and Distribution in the London Region c. 1300, London 1993.

11 Franz Irsigler, L'approvisionnement des villes de l'Allemagne occidentale jusqu'au XVIe siècle, in: L'approvisionnement des villes, 117–144.

12 Jeremy Whitehand, The Making of the Urban Landscape, Oxford 1992.

13 Karl Gunnar Persson, Grain Markets in Europe, 1500–1900: Integration and Deregulation, Cambridge 1999; Stephan R. Epstein, Freedom and Growth: The Rise of States and Markets in Europe, 1300–1750, London 2001.

14 Nathan McClintock, Why Farm the City? Theorizing Urban Agriculture through a Lens of Metabolic Rift, in: Journal of Regions, Economy and Society 3/2 (2010), 191–207.

15 Nick Heynen et al. (eds.), In the Nature of Cities – Urban Political Ecology and the Politics of Urban Metabolism, New York 2006.

gradually encroaching upon low-productive land and transforming its natural resources into commodities transported to an ever-hungry city.[16]

On the other hand, the awareness that urban food supply may work very differently from one household to another has been an essential feature of famine history over the past three decades. Inspired by the work of Nobel Prize winner Amartya Sen, famine history saw an important shift away from the aggregate level of cities or regions to the level of individual households.[17] According to Sen, food shortage was usually not induced by insufficient food availability in society as a whole, but rather by the insufficient "entitlements" to food enjoyed by some groups and individuals within a given society. Entitlement, conceived by Sen as "the ability of people to command food through the legal means available in that society", is a powerful concept capable of embracing all kinds of access to food. These include food production on one's own land, the "endowment", which produces "direct entitlements"; the conversion of labour and capital into food via the market, referred to as "exchange entitlements"; as well as other legal rights to food mobilised through distributions, gifts, or solidarities. While the concept of entitlement provides us with an ideal analytical tool for grasping the multiplicity of paths of food supply at the household level, most entitlement scholars, including Amartya Sen himself, were primarily interested in the role of the market as an – imperfect – allocator of food in times of famine.[18] Direct entitlements as well as entitlements via other legal rights have received only scant attention.

But what about Lorenzetti's goats, then? Is it possible that historians have dramatically underestimated the importance of such alternative entitlements to food provisioning in cities? Food studies of present-day cities increasingly point to the myriad ways in which urban households experiment with alternative ways of providing for food, outside regular market arrangements and outside direct involvement of the public authorities. Consumers themselves are producing food in all kinds of urban and peri-urban agriculture (UPA) – from rooftop gardens via guerrilla gardening to community farms.[19] They are also exploring other "alternative food networks" by buying food on farmers' markets or engaging in community-supported agriculture, or they acquire access to food through a new kind of "sharing economy".[20] While the motivations behind these practices are highly variable and the notion of "market independence" is often questionable,[21] they all challenge mainstream

16 Gilles Billen et al., Grain, Meat and Vegetables to Feed Paris: Where Did and Do They Come From? Localising Paris Food Supply Areas from the Eighteenth to the Twenty-First Century, in: Regional Environmental Change 12/2 (2012), 325–335; Sabine Barles, The Main Characteristics of Urban Socio-Ecological Trajectories: Paris (France) from the 18th to the 20th Century, in: Ecological Economics 118 (2015), 177–185.

17 Amartya Sen, Poverty and Famines: An Essay on Entitlement and Deprivation, Oxford 1982.

18 Stephen Devereux, Sen's Entitlement Approach: Critiques and Counter-critiques, in: Oxford Development Studies 29/3 (2001), 245–263; for a recent analysis of famine in medieval Europe inspired by Sen: Philip Slavin, Market Failure during the Great Famine in England and Wales (1315–1317), in: Past and Present 222/1 (2013), 9–49.

19 McClintock, Why Farm the City?; Frank Lohrberg et al. (eds.), Urban Agriculture Europe, Berlin 2015.

20 David Goodman et al. (eds.), Alternative Food Networks: Knowledge, Practice and Politics (Routledge Studies of Gastronomy, Food and Drink), London 2013.

21 Chiari Tornaghi, Critical Geography of Urban Agriculture, in: Progress in Human Geography 38/4 (2014), 551–567.

food systems based on traditional agro-industry and on the anonymous globalised food distribution chains.[22]

Given the potential multiplicity of sources of food supply at the level of individual urban households, historians too have to question the self-evidence of markets and/or states as allocators of food. For pre-industrial cities, scattered literature already suggests the importance of urban gardens,[23] the presence of rural "food farms" directly supplying elite households,[24] and the importance of food gifts.[25] However, because of the lack of systematic research on food strategies at the household level (and not only for urban upper-class households), it remains difficult to explain why such alternative ways of food provisioning disappeared in particular contexts while they persisted and grew in others. Based on the available, and highly fragmented, literature, the rest of this contribution hence offers a very preliminary survey of the changing importance of such alternative sources of urban food supply in European history before 1850, with particular emphasis on the role of UPA.

Mapping the variety and significance of urban agriculture in European history

In the preceding section, we argued that historians should broaden their analysis of urban food supply to include all kinds of alternative food supply chains. The direct production of food through forms of urban agriculture – and urban husbandry – constitutes an important aspect of such alternative urban food supply, although the two are not synonymous. While alternative food supply can include food produced by rural producers, urban agriculture – defined here as food production by urban dwellers – can also be firmly embedded in market arrangements.

Mapping the variety and significance of urban agriculture in the past, however, is far from easy, just as it is today,[26] given that many activities take place in the private sphere, out of sight of official registration and taxation. Generally speaking, the available literature tends to distinguish three contexts in which urban agriculture flourished. First of all, few historians will doubt the importance of agricultural activities in the many small towns which constituted the backbone of the European urban network before 1850. In a small town like Colchester in England, two thirds of all taxpayers in 1301 were involved in some form of food produc-

22 Robert Biel, Sustainable Food Systems: The Role of the City, London 2016.

23 Joan Thirsk, Alternative Agriculture. A History from the Black Death to the Present Day, Oxford 1997; Jean-Pierre Leguay, Terres Urbaines. Places, jardins et terres incultes dans la ville au Moyen Âge, Rennes 2009; Clément Gurvil, Les paysans de Paris du milieu du XVe au début du XVIIe siècle, Paris 2010.

24 Cf. Philip Slavin, Church and Food Provisioning in Late-Medieval England, 1250–1450: Production Costs and the Decline of Direct Demesne Management, in: Francesco Ammanati (ed.), Religione e istituzioni religiose nell'economia europea, 1000–1800, Florence 2012, 597–617; José María Cruselles Gomez, Producción y autoconsumo en contratos agrarios de la huerta de Valencia: siglos XIV y XV, in: Actes Ier Colloqui d'Història de l'Alimentació a la Corona d'Aragó, vol. 2/2, Lleida 1995, 61–78.

25 Chris M. Woolgar, Gifts of Food in Late Medieval England, in: Journal of Medieval History 37/1 (2011), 6–18.

26 Cf. Mapping Urban Agriculture: Lessons from Rome and Chicago, in: Farming the City, http://farmingthecity.net/?p=5621 (last visited 25 Aug. 2019).

tion.[27] Rodney Hilton saw a figure of 2,000 inhabitants as the threshold in distinguishing between town and countryside.[28] Such small towns, or *Ackerbürgerstädte* as they are labelled in German literature, can even be considered an integral part of medieval peasant society.[29] And although most urban and even rural historians would argue that involvement in food production did not necessarily diminish the industrial or commercial essence of such small towns, nor their urbanity in regard to culture, legal status, or identity,[30] access to food that was unmediated by the market is by and large considered as incompatible with urban growth, or as Peter Clark has argued: "accelerating urbanization was only made possible by increasing agrarian imports from urban hinterlands and the growth of […] markets".[31]

Secondly, alternative urban food entitlements are often associated with contexts of poverty and crisis. For nineteenth-century municipalities and charitable organisations, the promotion of allotment gardening proved an ideal instrument for improving subsistence levels without having to raise wages, while at the same time "protecting" workers from subversive socialist influences.[32] During both World Wars, bare necessity drove urban households to direct food production on a massive scale.[33] In the pre-industrial period as well, the persistence of food production by urban households might be associated with the typical makeshift economy of the urban poor: one pig, some poultry, and some home-grown vegetables might foster survival in uncertain times.

And thirdly, on the opposite face of the same coin, we find the rise of commercial horticulture – the specialised cultivation of fresh products such as vegetables or dairy – for the urban market, typically found in the inner circle of a von Thünen model. In different parts of northwestern Europe, horticultural activities apparently experienced a tendency towards professionalisation in the Early Modern period. English historians even speak of a horticultural "revolution" from the late sixteenth century onwards, which tends to be associated with Dutch immigrants fleeing the horror of religious persecution during the Eighty Years' War.[34] Near London in particular, some districts saw a proliferation of horticultural activities providing the growing city with an increasingly diverse supply of vegetables such as melons, asparagus, cucumbers, and so forth, produced by professional horticulturalists who continuously refined their production techniques throughout the seventeenth and eighteenth centuries, from glass bells to hotbeds. In 1718 the post-mortem inventory of one Robert

27 Richard H. Britnell, Growth and Decline in Colchester, 1300–1525, Cambridge 1986, 16–17.

28 Rodney H. Hilton, The Small Town as Part of Peasant Society, in: Rodney H. Hilton, The English Peasantry in the Later Middle Ages, Oxford 1975, 76–94, 81.

29 Cf. Kurt-Ulrich Jäschke/Christhard Schrenk, Ackerbürgertum und Stadtwirtschaft: Zu Regionen und Perioden landwirtschaftlich bestimmten Städtewesens im Mittelalter, Heilbronn 2002; Annika Björklund, Historical Urban Agriculture. Food Production and Access to Land in Swedish Towns before 1900, Stockholm 2010.

30 Rolf Kiessling, Die Stadt und ihr Land. Umlandpolitik, Bürgerbesitz und Wirtschaftsgefüge in Ostschwaben vom 14. bis ins 16. Jahrhundert, Cologne/Vienna 1989; Peter Stabel, Dwarfs among Giants. The Flemish Urban Network in the Late Middle Ages, Leuven 1997; Christopher Dyer, Medieval Small Towns and the Late Medieval Crisis, in: John Drendel (ed.), Crisis in the Later Middle Ages: Beyond the Postan-Duby Paradigm, Turnhout 2015, 35–52.

31 Peter Clark, European Cities and Towns, 400–2000, Oxford 2009, 45.

32 Jeremy Burchardt, The Allotment Movement in England, 1793–1873, Woodbridge 2002.

33 For Belgium, see Yves Segers/Leen Van Molle, Worker's Gardens and Urban Agriculture. The Belgian Allotment Movement within a Global Perspective (from the Nineteenth to the Twenty-First Century), in: Zeitschrift für Agrargeschichte und Agrarsoziologie 62/2 (2014), 80–94.

34 Malcolm Thick, The Neat House Gardens. Early Market Gardening around London, Totnes 1998.

Gascoine listed no fewer than 1,240 bellglasses in three gardens.[35] For Paris, a recent study by Gurvil revealed a similar tendency towards professionalisation in a somewhat earlier period. Whereas fifteenth-century Paris was still home to quite a few proper farmers (*laboureurs*) practicing a rather mainstream agriculture, sometimes even within the city walls, in the sixteenth century the *laboureurs* gave way to *jardiniers*, organised in a guild.[36] While most of the gardens were situated at the outskirts of the city or in the *banlieue,* each new extension of the city walls paradoxically entailed an increase in the amount of gardens and fields *intra muros*. At the same time some professional gardening areas persisted at a short distance from the city centre – such as the *Couture du Temple*, which from the fifteenth to the seventeenth century transformed from a cereal field into a gardening space and then into a residential quarter.[37]

Mediterranean Europe had a much older tradition of urban horticulture, often concentrated in irrigated areas of intensive cultivation near the city. Like many Iberian towns, Valencia had an important irrigated zone of intensive agriculture and horticulture in its immediate neighborhood: the *hortas* or *huertas*, which built on elaborate irrigation structures pre-dating the Christian conquest.[38] In the later Middle Ages, agriculture in the *hortas* was based on intensive smallholding farms which increasingly incorporated commercial cash crops like sugarcane and mulberry trees.[39] Even though parts of the *horta* laid outside direct urban jurisdiction, it was profoundly urban in terms of how it was regulated (the *guardia de l'horta*), in terms of landownership (parts of it belonged to the city-based nobility), and in terms of its labourers, who were recruited among city-dwellers. Finally, apart from horticulture we should not underestimate the importance of dairy production within or near the city walls. Milk was one of the most difficult food products to transport over long distances. As a consequence, even mid-nineteenth-century London, at that time the largest city in Europe, saw 80 percent of its milk consumption still produced in the immediate vicinity of the city.[40]

Over the past years, however, new research has increasingly shown that many instances of urban agriculture do not fit into any of these categories. First of all, urban food production by non-professional producers ("home food gardens") was not limited to small cities or *Ackerbürgerstädte*. In Rennes in the 1450s, 43.5 to 59 percent of the houses in the medieval parts and still 17 percent of the houses in the densely built Roman town centre had a vegetable garden or *potager*.[41] Fifteenth-century Rennes, the capital of the independent duchy of Brittany, was a medium-sized city of about 12,000 inhabitants. In his study of medieval Toulouse, which numbered 20,000 to 30,000 residents, Philipp Wolff also noted that only a few urban households were *not* self-sufficient in both grain and wine – although their fields

35 Ibid., 106.

36 Gurvil, Paysans de Paris.

37 For 1608, a detailed inventory of this area provides a glimpse of the activity of the *maîtres jardiniers*, mostly tenants cultivating *asperges*, *le pourpier*, *pimprenelle*, *estragon*, *persil*, *Thym*, *chicorée*, *la poirée*, *marjolaine*, *artichaut* as well as fruit (Gurvil, Paysans de Paris, 103–104, 464).

38 Thomas F. Glick, Irrigation and Society in Medieval Valencia, Cambridge 1970.

39 Antoni Furió/Ferran Garcia-Oliver, Household, Peasant Holding and Labour Relations in a Mediterranean Rural Society. The Valencian Country in the Late Middle Ages, in: Erich Landsteiner/Ernst Langthaler (eds.), Agrosystems and Labour Relations in European Rural Societies (Middle Ages–Twentieth Century), Turnhout 2010, 31–56.

40 P. J. Atkins, London's Intra-Urban Milk Supply, circa 1790–1914, in: Transactions of the Institute of British Geographers 2/3 (1977), 383–399.

41 Leguay, Terres Urbaines, 119.

and vineyards were not necessarily situated in the immediate vicinity of the town.[42] Geo-archaeological research also provides compelling new evidence for the importance and persistence of urban food production in both smaller and larger towns.[43]

Secondly, in some contexts home food gardens may have been more important for the middling and upper layers of society than for their poorer neighbours. Control over food supply was an important asset in a premodern society and hence an excellent social indicator. In the Catalan city of Manresa, most households disposed of food stocks exceeding 100 daily rations. The 20 percent poorest households, however, did not possess such food stocks, and hence were more dependent on daily market purchases than their wealthier neighbours.[44] In a late medieval Mediterranean context, drinking one's own wine was a matter of status: Francesco di Marco Datini, the famous fourteenth-century merchant of Prato, produced a wine befitting "great gentlemen" and used it as a gift within his extended commercial network.[45] However, it was probably the middling classes – ranging from the rank and file of the urban craft guilds to the administrative professions and small merchants – who were crucial in the history of urban agriculture. Through their household and occupational model, they disposed of both access to land, from the backyard of their shop or house to a rented plot of land outside the city wall, and family labour, which was theoretically available to grow food. In present-day Central Europe (Poland and the Czech Republic) as well, middling groups have a much higher probability of engaging in home food gardening than labourers.[46] It would hence be interesting to see if and how urban agriculture was impacted by the increasing social polarisation and the erosion of middling groups visible in many parts of Europe throughout the Early Modern period.[47]

And thirdly, the Early Modern professionalisation of horticulture was not a universal phenomenon. In the Low Countries, for instance, many cities did not display an inner von Thünen circle of specialised horticulture.[48] In some cities professional guilds of gardeners (*hoveniers* or *fruiteniers*) existed, but as in the case of Antwerp, they might be more active in retailing vegetables and fruit rather than producing them themselves.[49]

So, while urban agriculture should certainly not be seen as limited to contexts of poverty or immature urban development, we should not *a priori* overestimate its historical importance either. We should keep in mind that a city of 10,000 inhabitants in 1600 needed about 90

42 Philippe Wolff, Commerces et marchands de Toulouse (vers 1350–vers 1450), Paris 1954, 175 and 192.

43 See for instance on Brussels: Yannick Devos et al., An Integrated Study of Dark Earth from the Alluvial Valley of the Senne River (Brussels, Belgium), in: Quaternary International 460/1 (2017), 175–197; on Scotland: Richard Oram, Waste Management and Peri-Urban Agriculture in the Early Modern Scottish Burgh, in: Agricultural History Review 59/1 (2011), 1–17.

44 Jeff Fynn-Paul, The Rise and Decline of an Iberian Bourgeoisie: Manresa in the Later Middle Ages, 1250–1500, Cambridge 2016, 269.

45 Maria Giagnacovo, La tavola di Francesco e della sua famiglia allargata, in: Giampiero Nigro (ed.), Francesco di Marco Datini: l'uomo, il mercante, Florence 2010, 105–118, 110.

46 Joe Smith et al., Quietly Does It: Questioning Assumptions about Class, Sustainability and Consumption, in: Geoforum 67 (2015), 223–232, 229–230.

47 Guido Alfani/Wouter Ryckbosch, Growing Apart in Early Modern Europe? A Comparison of Inequality Trends in Italy and the Low Countries, 1500–1800, in: Explorations in Economic History 62 (2016), 143–153.

48 See the contribution of De Graef and Ronsijn to this volume.

49 Reinoud Vermoesen, Boerende stedelingen of verstedelijkte boeren: een verkennend onderzoek naar *urban farming* in vroegmodern Antwerpen, in: Tijdschrift voor Geschiedenis 128/4 (2015), 533–555.

Figure 1: Jan Wildens, Zicht op Antwerpen, 1636 (detail). Bird's-eye view of Antwerp, with the gardening district south-east of the city at the bottom.

Source: Amsterdam, Rijksmuseum, SK-A-616, https://www.rijksmuseum.nl/en/collection/SK-A-616.

square kilometres or 9,000 hectares to produce the bread grain it needed.[50] Strictly localised food provisioning was thus out of the question. Even in a sparsely populated country such as Sweden, where cities were granted large swathes of agricultural land by the crown, urban food production seldom accounted for more than 30 percent of urban food consumption.[51] There were notable exceptions, however, both in Sweden and elsewhere, and in many cases demography alone cannot explain why urban experiences with regard to urban agriculture were so divergent. At present, we remain largely ignorant of the importance of both home food gardens and professional or semi-professional horticulture for most parts of Europe throughout their history. Historians hence should urgently engage in mapping the contribution of urban and peri-urban agriculture (UPA) as well as other alternative urban food entitlements to the quality and quantity of urban food supply in different contexts.

Explaining the resilience and decline of urban agriculture

Confronted with a still very uncertain geography and chronology of urban food production, we can only formulate very modest suggestions on why urban agriculture boomed in one context but disappeared in others. Based on the available literature, a few questions and hypotheses can be formulated.

Access to land

From a supply-side perspective, historical variations in UPA might first of all be explained by access to land. Most forms of agriculture are land-based, and variations in access to land may strongly affect involvement in urban or peri-urban agricultural production. Access to land depends on the social distribution of land, which may have evolved in parallel to wealth inequalities, but also on institutional arrangements of landownership and land use, both within and beyond the city. In the urban hinterland, the rise of short-term leasehold or sharecropping provided a different potential for urban food production. In some cities, customary law was flexible enough to allow the fragmentation of property rights to urban real estate, which significantly increased the number of citizens owning parts of houses and gardens.[52] In many parts of Western Europe, the later Middle Ages also saw an increasing simplification of urban property relations towards uniform landlord-tenant relationships, with both actors operating on an increasingly transparent, anonymous, and volatile housing market.[53] Such evolutions greatly affected the access to urban land, and its potential to generate alternative food flows. The potential of land to generate food – rather than merely rent – explains why

50 E.A. Wrigley, Urban Growth in Early Modern England: Food, Fuel and Transport, in: Past and Present 225/1 (2014), 79–112, 98–99.

51 Björklund, Historical Urban Agriculture, 103–154.

52 This was for instance the case in late medieval Ghent as argued by Martha Howell, Commerce before Capitalism in Europe, 1300–1600, Cambridge 2010.

53 As argued for London by Vanessa Harding, Space, Property and Propriety in Urban England, in: Journal of Interdisciplinary History 32/4 (2002), 549–569.

many urban households strove to acquire secure property rights to land, both inside and outside the city. In the opposite scenario, increased accumulation of rural land and urban real estate might have ended this strategy.

Household income formation

Secondly, many forms of urban agriculture are developed as by-employment, and hence are subject to the availability of labour in the household economy. While older occupational stratigraphies typically attributed a single profession to households, based on the prime activity of the (male) head of household, there is an increasing awareness that most European households well into the Modern period can be understood as "pluriactive" economic units.[54] In practice many households combined different activities, both at home and outdoors, and food production might form an important part of these. On the other hand, we should refrain from seeing all premodern households as engaged in farming as by-employment: not all of them had the assets – especially land –, the time, or the incentive to do so.[55] Changes in the size and composition of the household of course affect food requirements as well as access to food, be it through direct production or the conversion of wages and capital. According to some scholars, late medieval cities in the northwest of Europe saw an increased importance of the nuclear family compared to extended family relations, delayed marriage (Hajnal's European Marriage Pattern), and increased legal and economic opportunities for working-class and middle-class women to participate in the labour market.[56] Nevertheless, in most late medieval cities nuclear households with two or more wage-earning members will have remained a strict minority. In general, however, we can hypothesise that the importance of food production as by-employment might be positively related to the size of the household, but inversely related to the importance of wage-labour in the household budget.

Commercialisation of agriculture

We should never forget that a large percentage of food was always traded via markets, both before and after the Black Death, and that the history of urban agriculture can never be isolated from the history of food markets. The commercialisation of food clearly did not remain constant. On the production side, changes occurred in the share of agricultural output which was brought to market. Whereas the subsistence of the peasant family remained the primary goal of production in some regions, in others specialisation and market-oriented production

54 Cf. Annie Antoine/Martine Cocaud, La pluriactivité dans les sociétés rurales. Approche historiographique, in: Gérard Le Bouëdec (ed.), Entre Terre et Mer. Sociétés littorales et pluriactivités (XVe–XXe siècles), Rennes 2004, 13–33; Laurence Fontaine/Jürgen Schlumbohm (eds.), Household Strategies for Survival, 1600–2000: Fission, Faction and Cooperation, Cambridge 2001.

55 Sebastian A. J. Keibek/Leigh Shaw-Taylor, Early Modern Rural By-employments: A Re-examination of the Probate Evidence, in: Agricultural History Review 61/2 (2013), 244–281.

56 Tine De Moor/Jan Luiten van Zanden, Girlpower. The European Marriage Pattern (EMP) and Labour Markets in the North Sea Region in the Late Medieval and Early Modern Period, in: Economic History Review 63/1 (2010), 1–33.

clearly gained in importance.[57] The importance and geography of long-distance trade in food changed as well. In the North Sea area, inter-regional integration of cereal markets was higher in 1500 than it was in 1300.[58] This market integration did not result in declining price fluctuations; often the opposite was and is true. Urban agriculture might decline as food markets became more integrated and urban access to food became primarily organised through the market. On the other hand, some forms of urban agriculture might expand in parallel to agricultural commercialisation, either as urban specialisations like grapes for wine, hops for beer, woad for textile colouring, and the like, as argued by Erich Landsteiner;[59] or as a reaction to mitigate the uncertainties of the food market. In peripheral regions, the continued reliance of urban economies on the production and provisioning of agrarian commodities supplied to core regions might be part of more general patterns of unequal development. Within the city, retail circuits changed: quite a few Mediterranean cities saw a transition from professional bread *baking*, of bread prepared at home by the consumers, to bread *making* in this period, implying a shift in access to cereals and flour from consumers to professionals.[60]

And finally, the expectations of consumers might have shifted from more "moral" attitudes to the market to more "commercial" ones. While food has always been traded in one way or another, it should not be automatically seen as a commodity, as a long historiographical tradition elaborating on E. P. Thompson's "moral economy" has demonstrated.[61] For Thompson, access to food at a "just price" was an essential feature of the precapitalist economic mentality, and the gradual retreat of such considerations in favour of purely commercial ones in the course of the eighteenth and nineteenth centuries inspired multiple food riots. While the moral economy has been investigated for other contexts and periods as well,[62] the way by which direct food production could also be approached as part of a moral food economy remains to be explored. What seems certain, however, is that neither the increasing commercialisation of agriculture nor the integration of European food markets automatically erased urban agricultural activities.

Politics

In today's cities, the decision to grow food in an urban context often cannot be explained by purely economic models, neither at the macro-level of the city nor at the micro-level of indi-

57 For the existence of opposite regional economic trajectories at short distances from one another, see: Erik Thoen/Tim Soens, The Family or the Farm: A Sophie's Choice? The Late Medieval Crisis in Flanders, in: Drendel (ed.), Crisis, 195–224.

58 Richard W. Unger, Maritime Transport and the Integration of Low Countries Grain Markets in the Late Middle Ages, in: Thoen/van Cruyningen (eds.), Food Supply, 101–122.

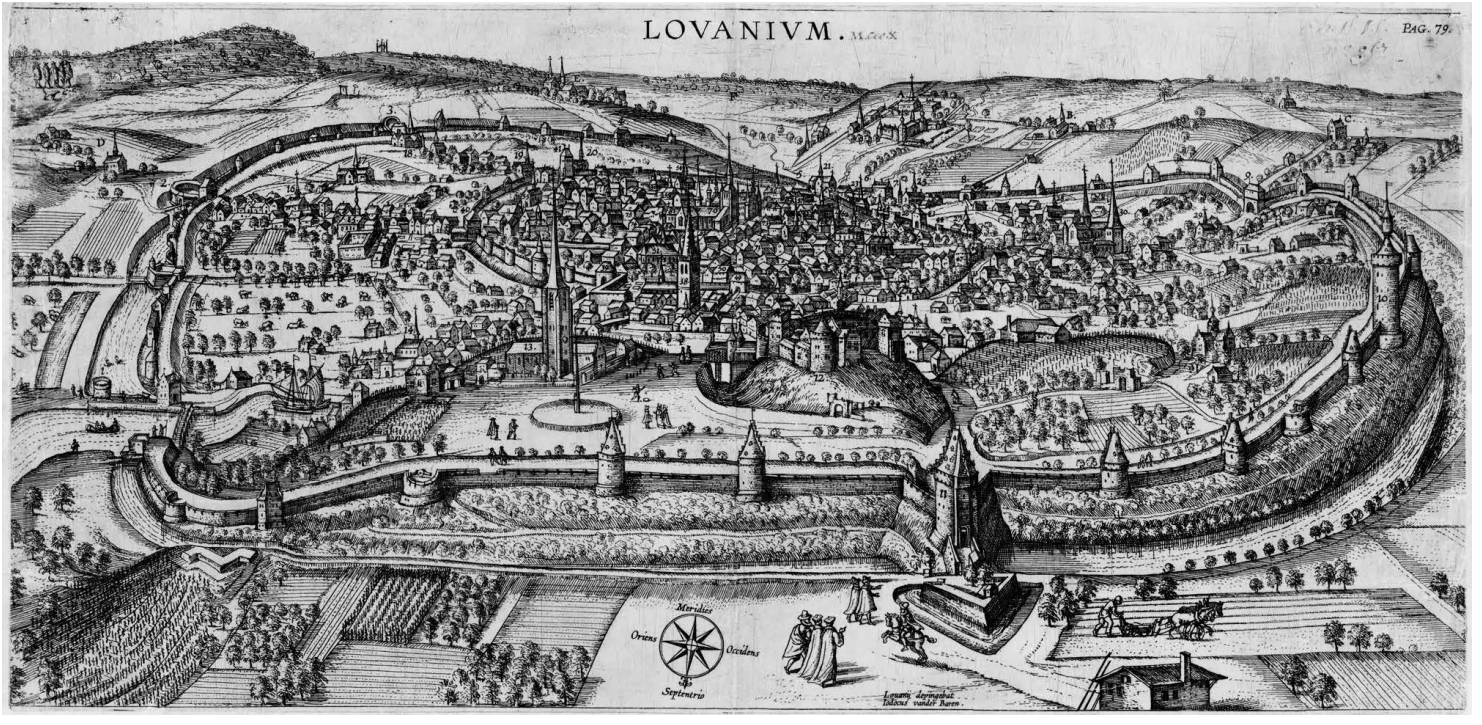
59 See the contribution of Erich Landsteiner to this volume.

60 Pere Benito Monclus, Famines sans frontières en Occident avant la 'conjoncture de 1300': à propos d'une enquête en cours, in: Monique Bourin et al. (eds.), Les disettes dans la conjuncture de 1300 en Méditerranée occidentale, Rome 2011, 37–86.

61 John Bohstedt, The Politics of Provisions: Food Riots, Moral Economy, and Market Transition in England, c. 1550–1850, Aldershot 2010.

62 See for instance discussions on the importance of "everyman's right" to collect wild berries (and firewood) in Scandinavia: Marjatta Hietala/Tanja Vahtikari (eds.), The Landscape of Food: The Food Relationship of Town and Country in Modern Times, Helsinki 2003.

Figure 2: Jodocus van der Baren, Lovanium. Bird's-eye view of Leuven, originally inserted in Justus Lipsius, Ivsti Lipsi Lovanium: sive opidi et academiae eius descriptio, libri tres, Antwerpen 1605. The artist clearly depicts the many vineyards, fields and trees both within and immediately outside the city walls.



Source: Public Domain, https://commons.wikimedia.org/wiki/File:Josse_van_der_Baren_-_View_of_Leuven_(from_Lovanium).jpg.

vidual urban households. Urban and supra-urban authorities may conceive policies which directly affect the potential for urban agriculture. As Björklund has shown, for instance, the persistence of direct urban food provisioning in Sweden cannot be understood without taking into account the policies of the Swedish crown, which in the seventeenth and eighteenth centuries not only provided cities with agricultural land, but also intervened in the distribution of land, pursuing more or less egalitarian policies that contrasted with the previous situation in which urban elites had enjoyed a much more pronounced grip on urban and peri-urban land. Broader institutional arrangements, such as those regarding access to (common) land or the organisation of taxation, might also influence urban agriculture. Cities and states intervened – directly or indirectly – in the organisation of urban agriculture, in ways that included fiscal policies in regard to land or animals, restricting the presence of animals in the city for sanitary reasons,[63] or regulating the urban commons. On the other hand, urban households might actively pursue food security themselves, complementing or supplementing municipal strategies, and urban agriculture could play an important role in these strategies. Within the field of peasant studies, the concept of "food sovereignty" has been advanced as an analytical tool to look at this assertion of control over food resources by smallholding producers supplying a localised market.[64] The food sovereignty agenda, which is as much a social movement as a theoretical approach, aims at replacing the social relations of an anonymous food "from nowhere" with a more tangible food "from somewhere".[65] Although the food sovereignty approach has been criticised for its unilateral focus on a supposedly homogeneous "peasant class", the concept can also be transferred to an urban context, and to the control of town-dwellers over the food they consume.[66]

Food cultures

Food is an essential part of daily life. Not surprisingly, it is embedded in a thick web of codes, preferences, and traditions, interacting with a more economic or political logic of calories and control.[67] Hence, the persistence of UPA in some contexts might also be part of cultural traditions or social conventions.[68] In many cultures food, and specific types of food in par-

63 The relation between sanitation and the disappearance of urban agriculture is very intriguing, as indicated for instance by Richard Oram for Early Modern Scottish cities. Dunghills – vital for fertilisation – were increasingly considered a nuisance by the literate elite, who were themselves less and less likely to be cultivating their own ground (Oram, Waste Management, 13–14).

64 Jan Douwe van der Ploeg, Peasant-Driven Agricultural Growth and Food Sovereignty, in: The Journal of Peasant Studies 41/6 (2014), 999–1030.

65 Eric Vanhaute, From Famine to Food Crisis: What History Can Teach Us About Local and Global Subsistence Crises, in: The Journal of Peasant Studies 38/1 (2011), 47–65.

66 Daniel Block et al., Food Sovereignty, Urban Food Access, and Food Activism: Contemplating the Connections through Examples from Chicago, in: Agriculture and Human Values 29/3 (2012), 203–215.

67 Bruno Laurioux, Manger au moyen âge: pratiques et discours alimentaires en Europe aux 14e et 15e siècles, Paris 2002; Massimo Montanari, A Cultural History of Food in the Medieval Age, London 2012; Chris M. Woolgar, The Culture of Food in England, 1200–1500, Yale 2016.

68 See for instance, in the case of Spain, the persistence but also merger of Christian and Muslim food regimes, the latter associated with milk, almonds, butter, and honey, cf. Olivia Remie Constable, Food and Meaning: Christian Understandings of Muslim Food and Food Ways in Spain, 1250–1550, in: Viator 44/3 (2013), 199–235.

ticular, were used to broker social relationships: hence the enthusiasm, according to Carole Goodson, of upper-class families in early medieval Rome for converting open spaces in the shrunken city to gardens and fields.[69] Changes in food regimes also had an impact on urban agriculture. Historians have described various nutritional transitions in cities, such as the increased consumption of meat in the late Middle Ages,[70] the "horticultural revolution" of the seventeenth century,[71] and the growing urban preference for expensive white bread.[72] As argued by Joan Thirsk, economic imperatives and preferences of taste often interacted to provoke changes in food production and supply. For her, the diversification of food production in the seventeenth century, with the increasing importance of horticulture, but also poultry, was part of a recurrent phase in the history of agriculture, away from mainstream agriculture towards diversification, small scale, and self-provisioning. To a certain extent, this was an adaptation to a new economic situation with lower grain prices, but it also had to do with taste and quality; after all, "a lot of flavor went out of food as it was produced commercially", as Thirsk provocatively concluded.[73]

Crisis

Subsistence crises and price spikes on the urban grain market were a recurrent feature of premodern city life.[74] While the rhythm of these crises might be partly dictated by spells of bad weather inducing harvest failures and "food availability declines" (FAD), hunger was never without social bias. It might hit particular households or groups in society, by their loss of ability to mobilise enough resources to acquire the necessary food: by "food entitlement declines" (FED), as formulated by Amartya Sen.[75] As mentioned above, direct entitlements to food produced on one's own land (or "endowment" in Sen's terminology) might be an important asset to counter recurrent urban food crises. However, as John Drendel recently argued with regard to food crises in premodern Mediterranean cities, we largely do not know the

69 Carole Goodson, Garden Cities in Early Medieval Italy, in: Ross Balzaretti/Julia Barrow/Patricia Skinner (eds.), Italy and Medieval Europe: Papers for Chris Wickham's Birthday, Oxford 2018, 339–355. In the urbanised world of late medieval Italy as well, control of food was needed to legitimise social advance, consolidate the power of individual clans, and retain private armed men and faithful clients (*consorterie*): Giuliano Pinto, Honour and Profit. Landed Property and Trade in Medieval Siena, in: Trevor Dean/Chris Wickham (eds.), City and Countryside in Late Medieval and Renaissance Italy. Essays presented to Philip Jones, London 1990, 81–91, 86; Philip Jones, Economia e società nell'Italia medievale, Torino 1980, 43–47.

70 Tim Soens/Erik Thoen, Vegetarians or Carnivores? Standards of Living and Diet in Late Medieval Flanders, in: Simonetta Cavaciocchi (ed.), Economic and Biological Interactions in the Pre-Industrial Europe from the 13th to the 18th Centuries, Florence 2010, 483–515.

71 Thick, Neat House Gardens.

72 Jan de Vries, The Price of Bread. Regulating the Market in the Dutch Republic, Cambridge 2019.

73 The quote by Thirsk comes from the discussion in Cavaciocchi, Alimentazione, 918. See also Thirsk, Alternative Agriculture.

74 There is a substantial literature on grain prices and their evolution from the later Middle Ages onwards, see for instance: Franz Irsigler, Getreidepreise, Getreidehandel und städtische Versorgungspolitik in Köln, vornehmlich im 15. und 16. Jahrhundert, in: Franz Irsigler et al. (eds.), Die Stadt in der europäischen Geschichte. Festschrift Edith Ennen, Bonn 1972, 571–610; Franz Irsigler/Dietrich Ebeling, Getreideumsatz, Getreide- und Brotpreise in Köln 1368–1797, 2 vols., Köln 1976/1977.

75 An overview in Guido Alfani/Cormac O'Grada (eds.), Famine in European History, Cambridge 2017.

extent to which urban gardens helped to mitigate vulnerability to food shortage and famine.[76] Was there a direct link between the expansion of urban farming and the recurrence of food crises? Karl Polanyi famously distinguished between two basic ways of coping with food shortages: "market economies" and "redistributive" systems, the latter characterised by the prevalence of granaries and staple politics.[77] A strong reliance on UPA for urban food supplies might be a feature of either, or alternatively, a third way of coping with food crises. Did UPA decline in response to either the increasing integration of food markets or the disappearance of hunger – the two being not necessarily related, as early integration of grain markets did *not* reduce the occurrence of price spikes? And conversely, do we see an increase in direct food production in times of war and uncertainty, as normal food chains were disrupted (as suggested by the popularity of UPA during both World Wars)?

Further outlook

While an increasing number of historical studies have revealed the wide variety of food-producing activities in cities and their immediate hinterland, it is now time to move the debate one step further, and explore the role that urban agriculture in all its variety played in the food provisioning of urban households. From what precedes it is clear that in many European cities – though not all –, urban food production retained its importance for at least some households in conditions where most economic models would not expect this. It remains to be seen whether this primarily had to do with a quest for food security in a context where food markets remained highly volatile; with a certain cultural habitus discovering the pleasure of home-grown food; with speculation on the urban land market; or with the existence of considerable labour surpluses in the urban economy. Moreover, explanations might be different from context to context. So, in order to understand the importance, the resilience, and the decline of urban agriculture in European history, a comparative and long-term approach is needed, comparing individual trajectories of cities and urban households engaging in direct food production. By doing so, we might rewrite the history of urban food supply and the urban food metabolism, which until today remains written as a history of market expansion and increasing food flows from the urban hinterland. In my opinion, such comparative exploration of urban agriculture should not limit itself to the macro-level of the city: only by disaggregating the city into the different households and their income and food strategies can we hope to unravel the driving and sustaining forces underlying the efflorescence, resilience, or decline of urban agriculture in history.

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76 John Drendel, Conclusion, in: Monique Bourin et al. (eds.), Les disettes dans la conjuncture de 1300 en Méditerranée occidentale, Rome 2011, 417–422, 422.

77 Karl Polanyi, Trade and Markets in Early Empires, Glencoe, IL 1957, 243–270. Medieval and Early Modern historians today usually see granaries for staple foods against a context of increasing market integration, see for instance Dominik Collet, Storage and Starvation: Public Granaries as Agents of Food Security in Early Modern Europe, in: Historical Social Research 35/4 (2010), 234–252.

Roberto Leggero / Mirella Montanari

Two Experiences of Urban Agriculture in Medieval Piedmont

A Comparison of Chieri and Novara (Twelfth and Thirteenth Centuries)

Abstract: The main line of investigation that led to the comparison of a proto-city such as Chieri with Novara was the discovery that urban agriculture was influenced by the city's network and relationship with the environment. The arid clay soils around Chieri and the scarcity of water pushed it towards specialised production of wine for markets and the creation of areas inside the city for the processing of agricultural products. In contrast, the Roman urban model of Novara and the character of its surrounding countryside facilitated the development of vegetable gardens and peri-urban crops. Two different urban structures and two different territories generated two diverse forms of urban agriculture.

Key Words: Chieri, Novara, Piedmont, Middle Ages, urban structure, urban agriculture

Introduction

This contribution aims to identify the different forms of resilience of urban cultivations, their structures, and the urban landscapes that derive from them in two cities in present-day Piedmont, Chieri and Novara, which are very different in terms of their geographical and political location. The chronological choice of the twelfth and thirteenth centuries was suggested by the profound demographic, institutional, economic, and urban changes which in those two centuries affected, to varying degrees, all the cities of northern Italy. Chieri and Novara are two cities founded in Roman times, the first one near Turin, in a hilly area subject to drought, the other – gravitating to Milan – near the River Ticino, in the irrigated plain. In the passage from Late Antiquity to the first centuries of the Middle Ages, both were affected by the process of urban decline triggered by the fall of the Roman Empire. It led to the disappearance of most Piedmontese cities because of their peripheral location. The urban layout of Chieri and its *municipium* (administrative district, *districtus*) disappeared completely between the fifth and sixth centuries AD, perhaps as a result of the devastation caused by the long Greek-Gothic

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War (535–553 AD), in favour of the nearby city of Turin. In its place remained a village surrounded by a constellation of small settlements, each with its own tiny administrative territory (*poderium* or *fundus*). Its inhabitants, formerly citizens (*cives*) with self-government, fell to the rank of peasants, legally subject to territorial lords. The spaces once occupied by urban buildings were converted into agricultural land distributed into small farms (*mansi*) according to the *curtis* system. In the twelfth century, however, Chieri recovered its urban characteristics and its inhabitants returned to self-government and managed to rebuild, during the thirteenth century, the original urban structure and the large administrative district. The disappearance of the Roman town-planning system conditioned Chieri's subsequent forms of usage of the city's land from which, unlike in Novara, crops disappeared. In the same way, even the countryside subject to urban administration was reorganised according to the changing consumption needs of citizens and urban markets, even going so far as to force the exclusive dedication of the land to the extensive cultivation of the vine.

Novara, on the other hand, was more resistant, undergoing only an urban and demographic contraction without losing the status of a city, seat of an episcopal see, and administrative centre of a district (*comitatus et districtus*). The persistence of the Roman urban layout also preserved the internal spaces of the urban *domus* dedicated to vegetable gardens and orchards (*viridarium*). Those spaces were later used for intramural urban viticulture and private horticultural cultivations. During the Middle Ages, in the countryside of Novara's *contado*, agriculture was reorganised by the municipal administration, which controlled every aspect through public officials appointed by the city to apply a strict regulation. This was in response to the different role of Novara as a centre of consumption and production of goods, and to the changing economic needs of urban society.

The two cases, similar to each other but with significant variations due to the different geopolitical characteristics and economic and social organisation, thus allow us to identify the different forms of resilience of crops and rural activities developed by Piedmont's cities in the communal age. This study is part of a wider research project still in progress, conducted jointly by the authors, on the concepts of "territory" and "landscape" in the Alpine and subalpine urban world in the Middle Ages. The comparative research conducted on Chieri and Novara is based on unpublished, published, and archaeological sources and on the existing bibliography. The first city, Chieri, was the subject of one co-author's doctoral thesis, focused on the thirteenth-century *Estimi* of the town, an exceptional source for the Middle Ages, preserved in the municipal archives of the city. These are an uninterrupted, though incomplete, series of books, one for each of the four urban districts, compiled by municipal officials from the year 1253 to 1289. Despite the name, they are not land registers but reports of the income of the heads of families (about two thousand), that is, a registration of all movable and immovable property, described in detail. The *Estimi* of Chieri, still unpublished, are the oldest documentary source of this kind preserved in Italy, a tool used by all Italian urban municipalities for assessing and collecting taxes. This was the most sophisticated form of direct taxation formulated by the medieval urban ruling classes. The analysis of the *Estimi* has been integrated with other types of published sources, such as the registers of official acts of the municipality of Chieri (twelfth and thirteenth centuries), the urban statutes of the thirteenth century, and the collections of charters drawn up by religious bodies and neighbouring urban municipalities. The study of Novara, in contrast, was complicated by the serious lack of documentary sources, due to a fire that devastated the municipal archives in the fourteenth

century. The author responsible for this part therefore proceeded using ecclesiastical sources, imperial diplomas, and the surviving urban statutes from the thirteenth and fourteenth centuries, as well as archaeological data and bibliography.

Chieri

From oppidum *to* villa murata *(tenth to thirteenth centuries)*

The town of Chieri is located about 15 kilometres from Turin. Although the Po River and the steep slopes of the Turin hills separate it from the capital of the Piedmont region, administratively it belongs to the metropolitan area of Turin. This situation would have disappointed the citizens of Chieri during the twelfth and thirteenth centuries: at that time, although it was not legally definable as a city due to the episcopal seat being in Turin, Chieri was administered by a fiercely independent council, capable of conducting itself in all respects as a true urban body.

The first mention of Chieri is from the second century BC, when *Carreum Potentia*, as it was then called, was a Roman *civitas colonia* and the seat of a thriving *municipium,* which had grown on the site of an older Celtic-Ligurian *oppidum*.[1] Although in the classical period it seems to have been a flourishing town of some importance, situated near the Via Fulvia,[2] a major artery of communication between Rome and Gaul, during the early medieval period it experienced a serious decline, and it seems to have been one of those many Piedmontese towns that disappeared in late Antiquity.[3]

After this brief period of oblivion, its name reappears in the written sources at the end of the tenth century. By this time, all traces of the Roman urban plan had been lost, to such an extent that even recent archaeological research has been unable to recover them.[4] Chieri is mentioned for the first time in a document dated 995 AD, now referred to as a simple village with restricted territory, owned by an institution or prominent persons who were in posses-

1 The first part of this article, concerning Chieri, synthesizes parts of the doctoral thesis of Mirella ("Mira") Montanari: Mirella Montanari, Demografia, urbanistica ed economia in un centro minore dell'Italia occidentale. Chieri nella seconda metà del Duecento, Firenze 1994. Most of the notes that follow will refer to this thesis. For the Roman period see G. Cresci Marrone, I romani nel Chierese, in: Museo archeologico di Chieri. Contributi alla conoscenza del territorio in età romana, Torino 1987, 27–34; Ada Gabucci, Carreum Potentia. Nascita e declino di una città romana, in: Gabriella Pantò (ed.), Archeologia a Chieri. Da Carreum Potentia al comune bassomedievale, Torino 2010, 29–50.

2 Cf. Giuseppe Corradi, Le strade romane dell'Italia occidentale, Torino 1968, 36–41; Gerhard Radke, Viae publicae romanae, Bologna 1981, 267–270; Pantò (ed.), Archeologia a Chieri.

3 Cf. Cristina La Rocca, Da Testona a Moncalieri. Vicende del popolamento sulla collina torinese nel medioevo (Biblioteca Storica Subalpina, vol. 192), Torino 1986, 16–92; Cristina La Rocca, "Fuit civitas prisco in tempore". Trasformazioni dei "municipia" abbandonati dell'Italia occidentale nel sec. XI, in: La contessa Adelaide e la società del secolo XI = Segusium 32 (1992), 103–140.

4 Archaeological excavations carried out in various parts of the city, including recent ones, have only been able to detect the existence in situ of a large temple, perhaps dedicated to the goddess Minerva, beneath the foundations of the collegiate church of Santa Maria, built in 1037 under the orders of Bishop Landulf of Turin (for which see the following note). See Gabucci, Carreum Potentia, 29–50.

sion of the land and who exercised local authority.[5] However, the settlement, probably already fortified, still occupied a strategic location near the medieval Via Francigena or Romea, in the region between the cities of Asti and Turin.[6]

In about 1037 the new lord of Chieri, bishop Landulf of Turin, enlarged and strengthened its ancient castle, while also granting it valuable market rights and an important collegiate church and baptistery, the *pieve* (*plebs*) of St. Mary (*S. Maria*), in order to capitalise on its strategic location.[7] This created the conditions for a rapid urban rebirth: the regular markets held in specific areas of the town attracted significant capital and new inhabitants, including foreign merchants and financiers, especially from Asti and transalpine areas. The district of the *pieve* was the model for the formation of an extensive municipal jurisdiction and administrative district, called the *contado* (Latin *comitatum*), which in the thirteenth century exceeded 50 square kilometres. There were about thirty hamlets and villages – often with castles – in the countryside, each with its own territory (*poderium*, *fundus*), which, taken away from their former lords, were administered directly by Chieri. The provision of a fortified settlement, guaranteeing protection but also enabling the exercise of jurisdictional power, acted as a magnet for wealthy and influential families from other cities and from its future territory, leading to the formation of an autonomous municipal body.[8]

In the eleventh century a mighty tower stood out on the rocky spur of St. George (*S. Giorgio*), the probable site of the ancient Celtic-Ligurian *oppidum*: this was the fortified part of Landulf's village of Chieri (see figure 1). This *castrum* dominated the *villa* below, situated on the plain, near the *pieve* of St. Mary and the Via Francigena. The urban layout seems to have been a loose-knit network which was mostly made up of farmsteads.[9] In this period agricultural activities and processing of products, and the cultivation of vegetable gardens, orchards, and vineyards, occupied wide areas within the built-up area of the *villa*, while in the *castrum* the houses abutted each other, so much so that the cattle market was limited to a narrow street, instead of a square as was the norm elsewhere.[10]

During the twelfth century a *borgo* (*burgus*) arose between the *castrum* and the original *villa*, joining them together.[11] In fact, both the slow but continuous immigration from the surrounding area and the broader demographic growth contributed to the creation of outlying inhabited areas concentrated on the south-eastern slopes of the castle hill, immediately behind and outside its walls. The most important reason for this was the area adjacent to the *castrum*, left clear to accommodate the precious cloth market known as the *Mercadillum*.[12] In Chieri, as elsewhere, the new annex to the castle was known as the *borgo* but, unlike what happened in all other cases, it did not end up defining the whole settlement; it did not include the castle itself and therefore did not denominate the place as a whole. The presence of a

5 Cf. Mirella Montanari, Castelli e politica territoriale sulla collina torinese nell'età del vescovo Landolfo (secc. X–XI), in: Giampietro Casiraghi (ed.), Il rifugio del vescovo. Testona e Moncalieri nella diocesi medievale di Torino, Torino 1997, 82.

6 Cf. Giuseppe Sergi, Potere e territorio lungo la strada di Francia. Da Chambéry a Torino fra X e XIII secolo, Napoli 1981; Montanari, Demografia, urbanistica ed economia, 96.

7 Cf. Montanari, Demografia, urbanistica ed economia, 84–90.

8 Cf. ibid., 96–97.

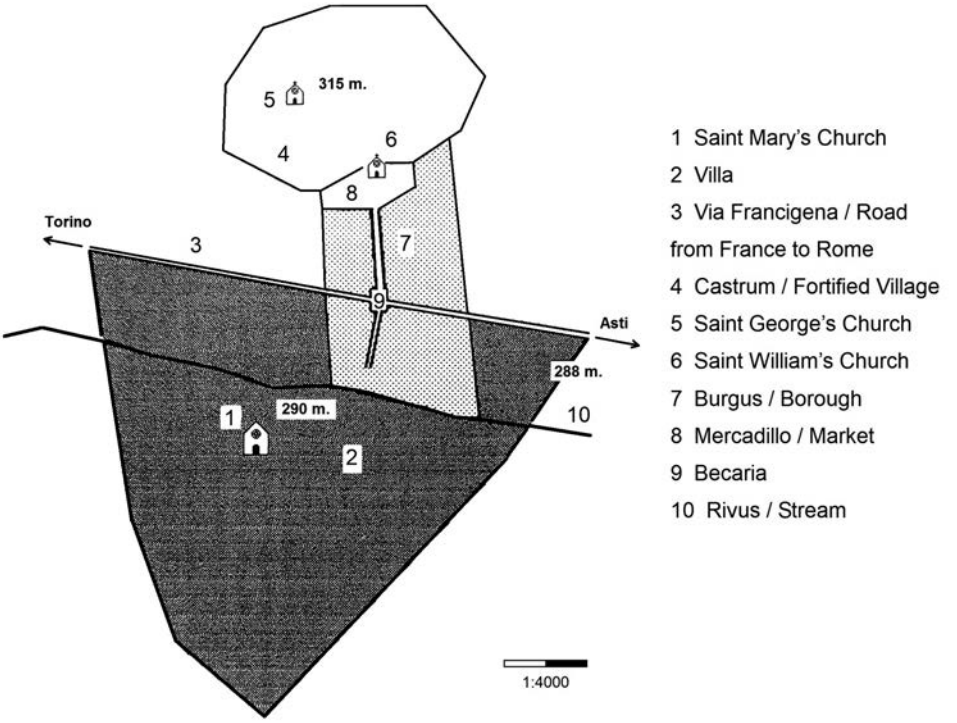
9 Cf. ibid., 97–99.

10 Cf. ibid., 197.

11 Cf. ibid., 97–99.

12 Cf. ibid., 110.

Figure 1: Chieri at the beginning of the eleventh century



Source: Mirella Montanari, Demografia, urbanistica ed economia in un centro minore dell'Italia occidentale. Chieri nella seconda metà del Duecento, Firenze 1994, 444.

large, sturdy *villa* proved to be the determining factor, and it was this that surrounded the complex of the *castrum-burgus*, giving its name to the whole concentric structure. So Chieri was never called *borgo* by its inhabitants, but was always defined precisely as *villa murata* (a walled settlement).[13] The new, larger tripartite settlement was already surrounded by walls and moats by the mid-twelfth century, appearing in the eyes of the Emperor Frederick I as a "maxima et munitissima villa" (big and strong settlement).[14] In this period crops were largely squeezed out of the urban area and concentrated in the outskirts; the plots of land inside the new city walls were densely occupied by residential and service buildings, so that the urban area was densely built up and inhabited "in the manner of a city".

13 Cf. ibid., 111.

14 Cf. the letter of Frederick I to Otto of Freising in Georg Waitz/Bernhard von Simson (eds.), Ottonis et Rahewini Gesta Friderici I. imperatoris (Monumenta Germaniae Historica. Scriptores rerum Germanicarum in usum scholarum, vol. 46), Hannover 1912, 2; Mirella Montanari Pesando, Villaggi nuovi nel Piemonte medievale. Due fondazioni chieresi nel secolo XIII: Villastellone e Pecetto (Biblioteca storica subalpina, vol. 208), Torino 1991, 13.

The thirteenth-century expansion and the new areas reserved for urban farming

At the beginning of the following century, the municipality of Chieri, composed mainly of members of a hundred family groups (called *hospicia*) dedicated to money-lending and local, supra-local, and transalpine trade activities, achieved full autonomy from any seigneurial power by means of military actions, cash purchase of entire villages with their territories, submission of territorial lords through political pacts, and the foundation of new villages.[15] The increase in the financial and mercantile activities of the Chierese ruling elites, which extended to the port of Genoa and the trade fairs, cities, and royal courts of France, Germany, Switzerland, and Flanders, brought to the *villa murata* a lasting economic prosperity.[16] Both these factors enabled Chieri to fully recover its ancient urban dimensions, although *de facto* rather than *de iure*: it became the political-institutional and economic hub of a vast area, able to exercise the role of privileged interlocutor with neighbouring cities and the imperial power.[17] As a result, the new "city" experienced a dramatic increase in population, reaching 12,000 inhabitants;[18] but since the area enclosed by the twelfth-century walls was too small, the new Chierese settled outside, forming populous suburbs beyond the walls.

The municipality soon expanded the protective circuit of defences by excavating a circle of large moats, reinforced by massive earth terraces known as *barbacani*, and building towers with portals along the main exit routes from the *villa*, to correspond with those already existing along the walls[19] (see figure 2). The moats, the *barbacani* and the towers together were called *cerche* or *cirche*. The new expansion of housing during the thirteenth century, however, did not reach this protective circle, from which it remained separated by two concentric bands consisting respectively of farmsteads (or *airali*) and of market gardens, initially the only plots that directly adjoined the internal barbican of the moat, often climbing up onto it. This location for the vegetable gardens, which needed constant irrigation, made sense given the need to remedy the chronic water shortage suffered by Chieri due to its location on chalky and sandy soils and the lack of springs in its vicinity.[20] Chieri was close to two torrential rivers with an inconstant flow of water, and only in Roman times had it succeeded in solving its serious water problems by the construction of an aqueduct, which had, however,

15 Cf. Montanari Pesando, Villaggi nuovi nel Piemonte medievale, 14.

16 Cf. Massimo Montanari, Origini. Cittadini e prestatori, in: Renato Bordone/Franco Spinelli (eds.), Lombardi in Europa nel medioevo, Milano 2005, 45–62.

17 Cf. Montanari Pesando, Villaggi nuovi nel Piemonte medievale, 13–14; Mirella Montanari, La popolazione di Chieri e del suo distretto alla fine del secolo XIII, in: Rinaldo Comba/Irma Naso (eds.), Demografia e società nell'Italia medievale (secoli IX–XIV), Cuneo 1994, 137–145.

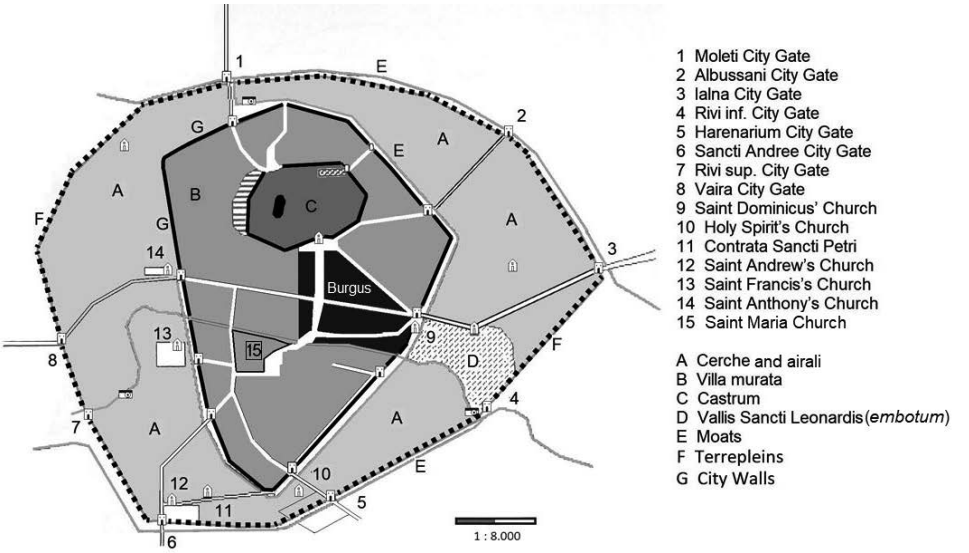
18 Cf. Montanari, La popolazione di Chieri, 137–145. However, the proposed estimate of 9,000 inhabitants must be revised to at least 12,000 in the light of Montanari's doctoral thesis: Montanari, Demografia, urbanistica ed economia, 141. For comparison, at the end of the thirteenth century Turin had 4,000 to 5,000 inhabitants, while Vercelli and Novara ranged between 11,000 and 12,000. Alessandria was the most populous with 15,000 (ibid.).

19 Cf. Montanari, Demografia, urbanistica ed economia, 109.

20 Cf. Mirella Montanari Pesando, Carenza idrica e attività molitorie nella Chieri medievale (secoli XII–XV), in: Rinaldo Comba (ed.), Mulini da grano nel Piemonte medievale, Cuneo 1993, 11–46.

since disappeared.[21] In the eleventh and twelfth centuries, the rivers were channelled into the "city's" moats. The proximity of the concentric bands of agricultural and horticultural plots to these moats, into which the water of the River Tepice flowed, meant that (during periods of rain) the owners of the gardens were more easily able to irrigate their land by digging little channels to access small quantities of water, which was combined with that obtained from the numerous rainwater wells.[22] The natural bed of the River Tepice continued, as in ancient times, to flow through the city next to the *pieve* of Santa Maria, acting as an open sewer. The urban sewage made the water foul-smelling, so the stretch of the stream in the area of the *cerche* was called *rio Merdario* or *Merdero*.

Figure 2: Chieri in the thirteenth century



Source: Mirella Montanari, Demografia, urbanistica ed economia in un centro minore dell'Italia occidentale. Chieri nella seconda metà del Duecento, Firenze 1994, 446.

The *airale*, a characteristic feature of the population centres of western Piedmont in the medieval period, consisted of a full farmstead, and all the agricultural activities took place there, with the products sold conveniently in the markets of the city, without additional transport costs.[23] The area of the *airali* therefore presented a more extensive and diffuse settlement structure than that of the residential nucleus and its new suburbs, encompassing green spaces such as vegetable gardens, orchards, and large farmyards. It also differed from the residential areas due to the presence of buildings typical of the rural environment such as sheds, barns,

21 Cf. ibid., 14–15. The thirteenth century "Estimi of Cheri" refer to a part of the Albussano district known as Canalis, a term used in the Medieval period to indicate the pipelines of the Roman aqueducts.

22 Cf. ibid., 41, note 70.

23 Cf. Montanari Pesando, Villaggi nuovi nel Piemonte medievale, 74; Montanari, Demografia, urbanistica ed economia, 109.

warehouses, cellars, stalls and animal shelters, and dry mills using animal traction,[24] as well as the presence of low-quality materials used in the construction of houses, which were often still roofed in thatch.[25] The brick kilns and wine presses were also situated in this area. At the end of the thirteenth century, however, in the Gialdo district, the *airali* were transformed into an *enbotum*, an entirely porticoed area consisting of warehouses and shops, devoted to the great flow of goods and people that drove the economy of this constantly growing city.[26]

In the case of Chieri, it is clear that, between the tenth and thirteenth centuries, urban development and land use *intra moenia* were the direct consequence of its political-institutional development, supported and directed by economic and social changes. As has been said, in the residential area formed from the early *castrum-burgus-villa*, the houses abutted each other. The turreted buildings of the urban aristocracy each occupied an entire block, certainly including large courtyards but dedicated solely to artisanal activities and other services; in no cases were they used for cultivation, nor was there space for gardens, apart from the indispensable wells for the collection of rainwater.[27] The town squares, as well as the areas around the churches, were encumbered with sales counters. In other cities, these spaces were used as *broilum*, a kind of fenced garden, vegetable plot, and orchard, but in Chieri religious cloisters were used for trade, hosting markets, loan desks, warehouses cluttered with merchandise, and workshops. Always, especially in eastern Piedmont and in Lombardy, the municipal buildings were called *broletti* because they were constructed next to the cathedral church or near it, taking advantage of the *broilum* of the bishop's seat, which was often the only sufficiently large plot of free land to build on in the heart of the city. This was not possible in Chieri, and the municipality had its own seat only from the end of the thirteenth century, settling in an existing building on the main market square, next to the church of St. William (*S. Guglielmo*), where it had already been meeting for some time.[28] In essence, during the twelfth and thirteenth centuries the green spaces were completely eliminated from the town and were relegated to the band of *airali* and market gardens, which by 1280 was also under attack from buildings used for trade.

At the same time, the Chierese managed to provide their municipality with an impressively large territory called *contado* (*comitatus et districtus*), in which they concentrated their landed properties (see figure 3).[29] The citizens who owned rural land were mostly the numerous members of the magnate class such as financiers, traders, and craftsmen of high level, Chieri's businessmen organised into societies called *hospicia*.[30] The *hospicia* were holding companies, each composed of multiple families. Their head offices were the showy urban towers, status symbols of their economic power and, at the same time, strongboxes for money and merchandise. In a systematic effort to rationalise agriculture, they resorted to innovative systems of division of their large landed properties into small and medium farms. These were

24 The animal-powered mills were so important in Chieri that the 1289 cadaster, the most complete, recorded in the *airali* of the city the presence of about fifty private mills driven by horses and donkeys: cf. Montanari Pesando, Carenza idrica e attività molitorie, 28.

25 Cf. Montanari, Demografia, urbanistica ed economia, 160.

26 Cf. ibid., 324.

27 Cf. ibid.

28 Cf. Montanari, Demografia, urbanistica ed economia, 330.

29 Cf. ibid., 183, 201.

30 Cf. Montanari, Cittadini e prestatori.

rented to independent farmers, under an arrangement designated by historians as "non-classic sharecropping" (*mezzadria non classica*).[31] The rental contracts were for short terms from a minimum of three to a maximum of five years. They allowed the owners to repossess the property with ease and control the choice of crops. The mobility of rented land in a *colonia parziaria* and the involvement of tenants in its management presents the image of a Chierese agriculture linked to a market economy rather than centred on the self-sufficiency of the individual farmer. The vine, as a very valuable crop, was influential in bringing landownership into the circuit of loans and finance: plots cultivated with vines were generally used as a pledge to obtain loans in cash and as a rich dowry for women of the dominant class.[32] That is why it was decided to grow the fine Nebbiolo grapes on a large scale, to obtain high-quality wines capable of ageing, a practice still rare in northern Italy. The landowning citizens moreover opted to extend the intensive cultivation of the vine throughout Chieri's territory, in both hilly and lowland areas, even less suitable ones, and to the detriment of forests and pastures. The *coltura assiale*, i.e. the mainstay of Chierese agriculture thus became the combination of cereals and vines, sometimes grown on the same land in alternating rows (*griciatum*). While extensive wheat and spelt crops for human consumption were being promoted at the expense of minor grains used for animal husbandry,[33] hemp and flax plantations were encouraged for the production of export-oriented fabrics. To this end, the Chierese ruling elite significantly reshaped the landscape of the countryside, successfully founding a new village near the confluence of the Stellone Torrent with the River Po, today called Villastellone.[34] Here were concentrated the water mills equipped with machinery (*folloni*, fullers) for the production of hemp and linen fabrics and the processing of wool. This was a brilliant expedient to remedy the problem of the chronic water shortage that afflicted Chieri and its immediate surroundings.

The agricultural world of Chieri was precisely regulated by the city statutes, which established the correct distribution of agricultural resources between villages and towns, the types of crops, the methods of production, and relations between owners and tenant farmers. They also protected the cultivated and uncultivated areas, through both the periodic election of public officials called *campari* in charge of control over the territory, and the use of direct and indirect taxation applied to agricultural landholdings and to agricultural and livestock products. This way of organising agriculture impressed itself on the local economy, which consisted partly in the production of goods for export but above all in trading in merchandise and money transactions. These characteristics probably account for the system of land organisation inside the walls. In order to store agricultural commodities and to process them easily and safely for the domestic and foreign markets, it was decided to concentrate the

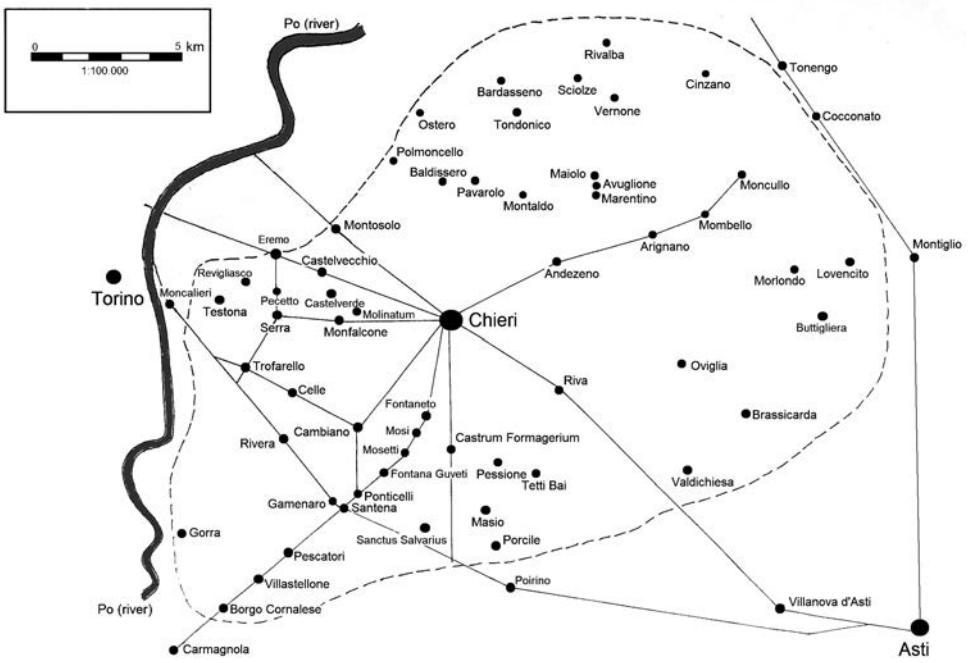
31 As is well known, the *mezzadria non classica* was the direct predecessor of "classic sharecropping" *(mezzadria, métayage)*: Antonio Ivan Pini, Campagne bolognesi. Le radici agrarie di una metropoli medievale, Firenze 1993, 93–135.

32 The municipal *Estimi* are clear in this regard, such as the tax return of Martina, wife of Oddo de Planca and daughter of the powerful financier Matteo Fresio, who had received as dowry from her father a Nebbiolo vineyard several dozen hectares in size, worth hundreds of *lire* of Asti: Montanari, Demografia, urbanistica ed economia, 216, note 42.

33 This was peculiar to Chieri and did not happen in neighbouring cities such as Turin, Moncalieri, and Chivasso, where oats, millet, and barley were still cultivated to the same extent as wheat and spelt.

34 Cf. Montanari Pesando, Villaggi nuovi nel Piemonte medievale, 23–92.

Figure 3: The *districtus* of Chieri (dotted line)



Source: Mirella Montanari, Demografia, urbanistica ed economia in un centro minore dell'Italia occidentale. Chieri nella seconda metà del Duecento, Firenze 1994, 448.

urban *airali* and the string of market gardens within the circle of moats, particularly in two districts, Arene and Albussano. Agriculture had found a place in the city, since it was functionally inserted within the economic and financial system established by the ruling elite: in Chieri, *airali* and urban gardens were a necessary link in the chain of transactions between the countryside and the city markets.[35]

In the thirteenth century the use of urban peripheral space for agricultural purposes at Chieri shows the close link between finance, commerce, and agriculture. This link was so important that, in a period when housing was in short supply, building sites (*sedimen*) – albeit peripheral ones – were sacrificed in favour of the creation of *airali*, planned in accordance with market needs. The same *airali* also provided hospitality to foreign merchants, who could stay there temporarily to shelter their animals and goods. These places functioned alongside the network of hostels and private mansions in offering well-organised hospitality of a high standard, in this way again supporting the city's main economic activities.[36]

The importance of urban agriculture in thirteenth-century Chieri perhaps sufficiently explains the choices made by the local ruling elites, which were based on the need to support production, at the expense of aesthetic considerations.

35 Cf. Montanari, Demografia, urbanistica ed economia, 201–206.
36 Cf. ibid., 324.

Novara: a case of urban continuity

Novara[37] was also a Roman *municipium*, but unlike Chieri, its history continued unbroken into the medieval period; however, it did not enlarge its walls, which in the Middle Ages largely followed the Roman ones, some fragments of which are still visible today. The city, located in the heart of the Po Valley, about 50 kilometres from Milan, lay on a naturally confined site to the east of the River Ticino (about 14 kilometres away) and to the west of the River Sesia (17 kilometres).[38] Novara was the recognised seat of a bishopric and therefore merited the title of city. However, the historical transition of Novara from late Antiquity to the early medieval period is not easy to interpret. In general, "the history of the city in the fifth century […] is poorly recorded": according to tradition, unsupported by documents, the alleged first bishop of Novara, Gaudentius, held the see between 398 and 418 AD.[39]

In the fifth century the demography of Novara was already complex, since the city was the seat of a *praefectura Sarmatorum*, and therefore had a military contingent of *foederati*. As in other places in Piedmont, this resulted in a mix of urban ethnic and cultural elements.[40] The great city baptistery was constructed between 433 and 466 AD, and its existence confirms the presence of an episcopal seat in the city as, in this period, only the bishops could baptise the faithful.[41]

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37 This section of the article, concerning Novara, has been contributed by Roberto Leggero.

38 In fact Novara succeeded in resisting, thanks also to the intervention of Vercelli, the "expansionist" claims of the Biandrate settlement, which might have become an annoying competitor on the same bank of the Sesia through the actions of the counts of Biandrate, belonging to the consortium of the counts of Pombia, which had clashed with the Novarese bishop in the eleventh century for control of the foothill and mountain areas of the province. Maria Giovanna Virgili, I possessi dei conti di Biandrate nei secoli XI–XIV, in: Bollettino storico-bibliografico subalpino 72 (1974), 633–685; Walter Haberstumpf, I conti di Biandrate in Oriente nei secoli XII e XIII, in: Walter Haberstumpf, Dinastie europee nel Mediterraneo orientale. I Monferrato e i Savoia nei secoli XII–XV, Torino 1995, 153–175; Giancarlo Andenna, I conti di Biandrate e le città della Lombardia occidentale (secoli XI e XII), in: Formazione e strutture dei ceti dominanti nel medioevo: marchesi conti e visconti nel regno italico (secoli IX-XII) (Nuovi Studi Storici, vol. 39), Roma 1996, 57–84; Giovanni Deambrogio, Antologia di scritti, ed. by Gabriele Ardizio, Mercurio 2009, 113–124 (La rugia que vadit Casalinum o rugia nova novariensis ed il distretto medievale di Biandrate) and 181–186 (La Baraggia di Zerboli ed i confini del distretto medievale di Biandrate); Mirella Montanari, Comunità, città e signoria vescovile: fra Piemonte e Lombardia nei secoli XII–XIII, in: Renato Bordone et al. (eds.), Lo spazio politico locale in età medievale, moderna e contemporanea, Alessandria 2007, 69–77.

39 Simona Gavinelli, La Vita sancti Gaudentii nei codici carolingi, ed. by Fabbrica Lapidea della Basilica di San Gaudenzio, Novara 2013, 8. See also Battista Beccaria, Alle origini della provincia. La diocesi come "prototipo" del territorio novarese, in: Mirella Montanari (ed.), Una terra tra due fiumi: la provincia di Novara nella storia, vol. 1: L'età medievale (secoli VI–XV), Novara 2002, 37–74; Battista Beccaria, La "questione di san Gaudenzio" nell'ultimo mezzo secolo. I problemi intorno alla figura del primo vescovo e la loro soluzione, in: Novarien 40 (2011): San Gaudenzio nel III centenario della traslazione, 9–36, where it is proposed that Gaudentius should be considered an historical personage, despite there being no reliable evidence attesting his existence. Furthermore Il Cristianesimo a Novara e sul territorio. Le Origini: Atti Del Convegno, Novara 10 ottobre 1998, Novara 1999.

40 Paolo De Vingo, Il fenomeno della sovrapposizione della popolazione nel Piemonte centro-meridionale: le trasformazioni di una società mista tra tardoantico e altomedioevo, in: Archeologia Medievale 34 (2007), 303–327, 304, note 9, for the information about the *praefectura*, and 303–304 for the discovery in Pollenzo of the burial of the wife of a senior officer commanding a division of *foederati*. See also Beccaria, Alle origini della provincia, 56.

41 Beccaria, La "questione di san Gaudenzio", 13: "The dating of the first major buildings of the Novarese episcopal church (basilica and baptistery) did not allow us to go back further than the age of Laurentius, the third prelate

It can be assumed that some of the urban changes in this period were connected with the critical phase of the war between the Goths and the Byzantines (535–553)[42] and with the arrival of the Lombards. In this context Novara played a significant military role in the defence strategy of the city of Milan, as described by Procopius of Caesarea.[43] Furthermore, the construction of the *Basilica Apostolorum* on the initiative of Bishop Honoratus could signify a building recovery in the city in this century.[44]

Despite all this, however, the documentary evidence shows "beyond any doubt that Novara, while remaining an episcopal seat, officially lost its pre-eminence as a regional capital": this role passed to Pombia, a well-placed and well-fortified locality on the main waterway of the area, the River Ticino, which became the capital of an administrative region (*iudiciaria)* and then of a *comitato* "that came to include the city [of Novara] itself".[45] Perhaps the loss of status can be linked, as in other cases, to the city's resistance to the Lombard occupation.[46]

In such a complex political situation, the demographic picture within Piedmont, and also Novara, was no more stable than in previous periods.[47] Hence, perhaps between the sixth and seventh centuries, the city would have shrunk towards the area of the forum, which was reinforced by towers, at least three according to the archaeological finds of 2005 and earlier. Perhaps this could be the *castrum* created by Bishop Honoratus in 490, the position of which has been debated for some time.[48] The shrinking of the inhabited part of the city would have been determined by the decline in political prestige and by a demographic decline that left

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of Novara: approximately 430–450 AD. The accurate thermoluminescence examinations carried out by the Piedmont architectural superintendent on a large sample of bricks from our baptistery, placed its construction in the period 433–466" (translated from the Italian by the authors).

42 Andrea Bertani, Il 'castrum' dell'isola di S. Giulio d'Orta in età longobarda, in: Silvia Lusuardi Siena (ed.), Fonti archeologiche e iconografiche per la storia e la cultura degli insediamenti nell'Altomedievo: atti delle giornate di studio, Milano-Vercelli, 21–22 marzo 2002, Milano 2003, 247–271.

43 Procopius, History of the Wars, Book V and VI: The Gothic war, London/Cambridge, MA 1919, 397.

44 Maria Motta, Novara medioevale: problemi di topografia urbana tra fonti scritte e documentazione archeologica (Memorie dell'Istituto lombardo. Accademia di scienze e lettere, vol. 38/3), Milano 1987, 173–348, 206.

45 Aldo A. Settia, Gariardo "de castro Fontaneto" e i castelli novaresi dell'alto medioevo, in: Giancarlo Andenna/Ivana Teruggi (eds.), Fontaneto: una storia millenaria. Monastero, concilio metropolitico, residenza viscontea. Atti dei convegni di Fontaneto d'Agogna (settembre 2007, giugno 2008), Novara 2009, 15–27 (translated from the Italian by the authors).

46 "Finally, we note that even Novara, in the post-Carolingian age, appears to have lost the role of administrative capital and to have been placed within the district of Pombia (although not within the alleged 'duchy' of S. Giulio d'Orta), a situation that could imply a fate similar to those cities which had been punished for resisting the Lombard conquest" (translated from the Italian by the authors); Aldo A. Settia, L'alto medioevo ad Alba. Problemi e ipotesi, in: Rinaldo Comba (ed.), Studi per una storia d'Alba, vol. 5: Alba medievale. Dall'alto medioevo alla fine della dominazione angioina: VI–XIV secolo, Alba 2010, 23–55. On Pombia, see also Mirella Montanari, Vicende del potere e del popolamento nel Medio Novarese (secc. X–XIII), in: Bollettino storico-bibliografico subalpino 102 (2004), 365–411; Mirella Montanari, I borghi nuovi come fulcri dell'espansione commerciale urbana: il caso di Novara (secc. XII–XIII), in: Renato Bordone (ed.), Le villenove nell'Italia comunale. Progetti di governo territoriale nel riordino dell'insediamento rurale (Atti del I Convegno Nazionale di Studi, Montechiaro d'Asti, 20–21 ottobre 2000), Montechiaro d'Asti 2003, 119–133.

47 De Vingo, Il fenomeno della sovrapposizione della popolazione, 307.

48 "For the city to be able to resist attack, it had to be protected by effective defences; and this consideration would support the hypothesis that the 'castle' built by Bishop Honoratus at the time of Ennodius can be identified, as some have suggested, with a strengthening of the defences around the cathedral. The recent discoveries of towers inside the city (for which there are no official archaeological reports as yet) could be evidence of this. Indeed, it cannot be ruled out that these towers belonged to the circle that delimited Novara as a 'retracted city',

large areas uninhabited within the perimeter of the walls. The toponyms *pasquarium*, *pasquirolum* and *ortellum*, contained in later documents, "certainly refer to a period of depopulation, if not also of urban ruralisation"[49].

So, during the period of Lombard domination and also during the Carolingian period, Novara remained "in the shadows". Its inclusion in the administrative region of Pombia, where the public official in charge of administering the county was located, marked a rather unusual situation, though one not entirely unknown to historians, since the seat of a county was usually located in an urban centre.[50] Moreover, as some scholars have stated, in the sixth to eighth centuries the possession of an episcopal seat was not enough to define whether or not a place was a city.[51] In the case of Novara, which shrank into a fortress city[52] and lost its status as an administrative centre, and whose first two bishops are attested only by later tradition, it can be assumed that its urban status was particularly weak.

All this is relevant to the theme of urban agriculture because, with the city experiencing a demographic decline, withdrawing into a smaller area and leaving free or partially free space between the inhabited areas and the ancient walls, the conditions were established for the beginning of intramural agricultural activities.

The political and economic recovery of Novara took place due to several factors. The collapse of the political and administrative role of Pombia, as a result of the shattering of the Carolingian empire, was important, but so was the presence of the bishop, with the episcopal see providing cultural patronage[53] and supplementing the civil power. And of course the underlying importance of Novara should not be forgotten, as a transit stop for those heading to Vercelli and Turin from Milan or Como and vice versa.[54]

However, despite the renewed importance and prestige of the city, housing density was still not high in the eleventh century. This is shown by the fact that, even without taking into account the market and other public spaces, there were still areas without buildings, on which crops were grown.[55]

In order to understand the relationship between the city and the countryside, and therefore the constituent elements of intramural and peri-urban agricultural production, it is important to consider the particular circumstances of the Novara region from the orographic and

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of which other examples are known" (translated from the Italian by the authors); Settia, Gariardo "de castro Fontaneto", 18. Furthermore Beccaria, La "questione di san Gaudenzio", 25 and 29–30.

49 Motta, Novara medievale, 227 (translated from the Italian by the authors).

50 Montanari, I borghi nuovi, 119.

51 Tiziana Lazzari, Campagne senza città e territori senza centro. Per un riesame dell'organizzazione del territorio della penisola italiana fra tardo-antico e alto medioevo (secoli VI–X), in: Città e campagna nei secoli altomedievali (Settimane della fondazione Centro Italiano di studi sull'alto Medioevo, vol. 56), Spoleto 2009, 621–652, 636.

52 Ibid., 632.

53 The ruling bishop, Tito Levita, was active in the episcopal scriptorium: Paolo Rosso, "Constituatur magister idoneus a prelate". La ricezione in area subalpina delle disposizioni dei concili lateranensi III e IV sull'istruzione del clero, in: Reti Medievali Rivista 17/1 (2016), 467–562, 485, http://www.rmojs.unina.it/index.php/rm/article/view/4939/5522 (last visited 25 Sept. 2019). Furthermore Beccaria, La "questione di san Gaudenzio", 32.

54 Mirella Montanari, La Valle dell'Arno e le comunità del Seprio meridionale dall'età tardo antica alla fine del medioevo (secc. VI–XV), in: Roberto Ghiringhelli (ed.), Oggiona Santo Stefano: una comunità del Seprio nella storia, Oggiona 2004, 50–81.

55 Motta, Novara medievale, 281.

hydrographic points of view. The River Sesia had a torrential character, while the Ticino, with a more constant flow, was intensively used for the transport of goods and people, becoming the "symbol of international openness" of the Novara area[56] (see figure 4). In addition the region was crossed by many other rivers of a torrential character (the Agogna, the Terdoppio, the Arbogna) and dotted with springs, water meadows (*pratum marcidum*), and marshes.[57] To support livestock farming, which was practiced intensively in the area, limiting transhumance to the hilly and alpine areas of the region, it became necessary to regulate the water from the twelfth century by digging a network of ditches and canals.[58] The urban and peri-urban agriculture of Novara was probably also determined and conditioned by these factors, favouring the cultivation of high-value crops, in particular the vine, within and in the immediate vicinity of the urban walls.

The description of nineteenth-century Novara provided in the contemporary *Dizionario geografico* of Goffredo Casalis provides a rough idea of the possible link, in the pre-industrial period, between cultivation inside the city and peri-urban agriculture. Casalis, describing the squares and public gardens of Novara, stated that the city, thanks to its elevated position above the plain, offered beautiful views of the surrounding landscape in which to immerse oneself when taking a short walk from the city centre. In fact, at the time when Casalis was writing, the great seventeenth-century bastions that separated the city from the countryside, with their wide glacis, had been partially demolished. The countryside was indistinctly defined and a forest bordered the winding course of the Agogna River.[59] Describing the peri-urban crops, Casalis stated that

> "the suburbs, within three miles, are cultivated with wheat, rye, maize, and oats, in dry but irrigated meadows, and with vines mostly mixed with wild cherries. The land is very fertile and produces cereals, hay, and grapes in great quantities […]. Near the walls of the city one can see many vegetable gardens that produce all kinds of green vegetables".[60]

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56 Giancarlo Andenna, Una terra d'acque tra due fiumi, un lago e montagne bianche di neve, in: Montanari (ed.), Una terra tra due fiumi, 13–34. See also Roberto Leggero, Dando eis locum idoneum. Identità politica delle comunità rurali del Novarese in età medievale, Milano 2008.

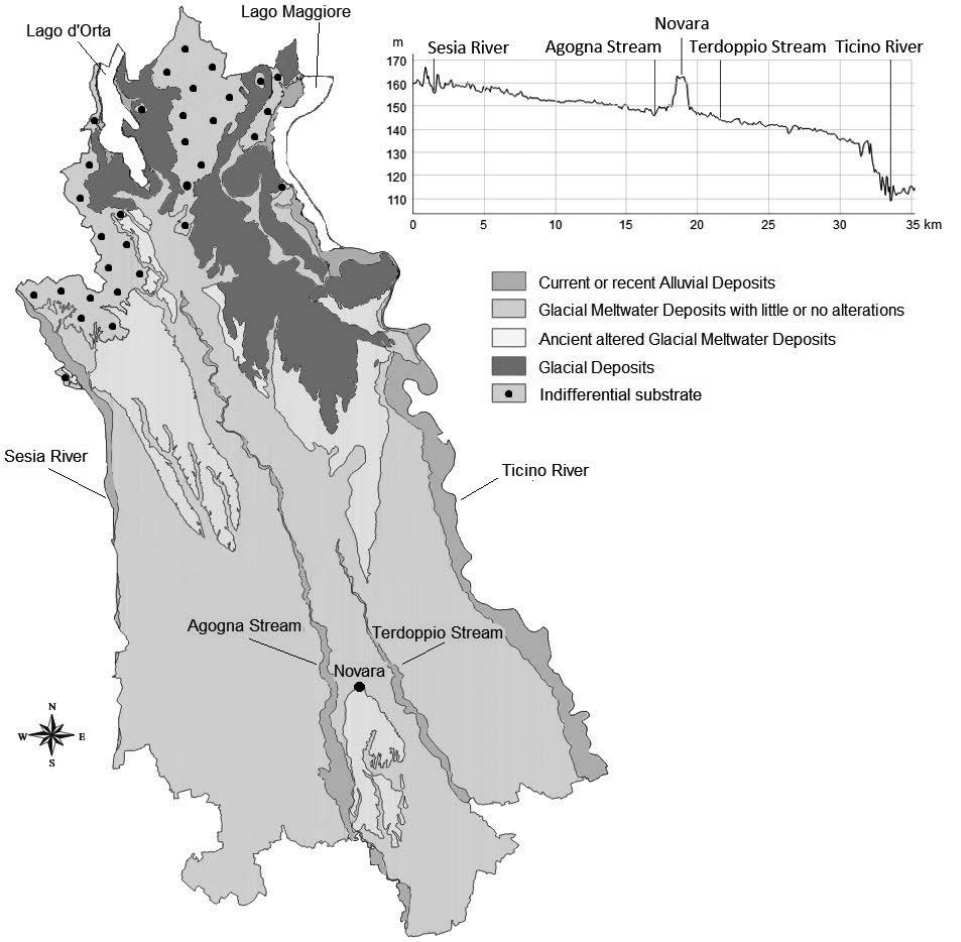
57 Annalisa Bove et al., Idrogeologia della pianura piemontese, Torino 2005; Andenna, Una terra d'acque tra due fiumi.

58 Montanari, I borghi nuovi, 121: "The ruling classes of the leading municipality of Novara made an astute and innovative decision to use the abundance of waterways, which had earlier on been channelled into a complex system of irrigation ditches, for the purpose of irrigating the dry lands of the middle and lower plains, in order to create pastures for the raising and breeding of livestock. This led to the growth of artisan groups who worked with hides and leather […] from the mid-twelfth century, water management, water meadows, the production of hay, cattle breeding and leather processing accounted for two thirds of the economic production of Novara" (translated from the Italian by the authors); Andenna, Una terra d'acque tra due fiumi, 24–25.

59 Goffredo Casalis, Dizionario geografico storico-statistico-commerciale degli stati di S.M. il re di Sardegna, vol. 12, Torino 1843, 128. It should be noted that the fortifications of the modern period, which overlapped the Roman and medieval ones, had been demolished both as a result of the decision of Napoleon, who at the beginning of the nineteenth century had ordered the dismantling of most of the bastioned walls of the Piedmontese cities, and by the will of the House of Savoy in the 1840s, as Casalis himself recalled.

60 Ibid., 133 (translated from the Italian by the authors).

Figure 4: Geological map of the current Province of Novara



Source: Adapted from https://www.provincia.novara.it/Ambiente/DifesaSuolo/PAEP/3geologia.pdf.

This scene, if we subtract those plants imported from America, provides a useful impression, allowing us to also visualise the forms of peri-urban agriculture in earlier periods.

Novara stands on a rocky spur, about twenty metres above the plain below. Therefore, between the gate of St. Stephen (*Porta S. Stefano*) and of St. Agapius (*Porta S. Agabio*), there was a slight slope down towards the east-northeast and east-southeast. Here the crops caught the morning sun, and indeed the vine has been cultivated in this area since the tenth century. However, the best-oriented areas of the city were those that faced south-southeast.[61] It is

61 In Piedmont, especially in the Langhe area, the term *sörì* or *sorito* (sunny place) identifies "the best locations for vineyards" (Disciplinare di produzione dei vini a denominazione di origine controllata e garantita "Dolcetto di Diano d'Alba" o "Diano d'Alba", 8, http://www.langhevini.it/pagine/ita/denominazioni/dolcetto-diano-alba-docg.lasso [last visited 26 May 2018]), which determine both the quality of the wine and the price of the land

therefore not surprising that the earliest document mentioning the presence of vines near the city but outside the walls refers to an area at the eastern end of the *cardo*,[62] near the gate of St. Mary (*Porta di S. Maria*).[63] The document is an agreement dated March 899: Novempertus, deacon of the important church of St. Gaudentius (*S. Gaudenzio*), exchanges landed property with the bishop of Novara, Garibaldo. The high value of these properties is evidenced by the fact that it is the bishop and a deacon of St. Gaudentius who are respectively owners of one *terra vinea* of 5 *perticas* and 16 *tabulas* and another of 3 *perticas* and 13 *tabulas*. The lands subject to the exchange were "in loco qui dicitur Caselle […] prope civitatem Novaria", that is "in the place called Caselle" in the village of St. Mary (*S. Maria*), therefore outside the city but near the town gate from which the village took its name.[64] Among the listed owners of the properties adjoining the two plots of land are other religious bodies and priests, further confirming the quality of the properties. Two further deeds from 1234 and 1299 refer to the locality of Caselle and provide evidence of the continuity of winegrowing in the area.[65]

However, vineyards are also documented within the city. The earliest document that identifies the presence of vines and fruit trees within the walls dates to 924 AD. In it the bishop of Novara, Dagiberto, exchanges a *iugerum* of land comprising "casis, curtis, edificiis, vitis" (houses, courts, outbuildings, and vines) located outside the city near the church of St. Stephen (*S. Stefano*), for a plot of two *perticas* and seventeen *tabulas* which included "casarum, tectis, vitis […] pomiferis" (houses, sheds, vines, and fruit trees), located near the *forum* and therefore within the circle of walls. The landholding must have been near the intersection of the *cardo* and the *decumanus*,[66] where today there are the remains of one of the towers, thought to be defensive structures newly built in the period of the shrinking of the urban perimeter.

Throughout the southern area of the city there were numerous properties belonging to the church. To some extent this situation has continued to the present day. Maps of the city from the eighteenth century show a prevalence of green areas in this sector (see figure 5, the dark grey areas), while even today the largest private area located within the perimeter of the old walls coincides with the episcopal gardens in the southern part of the city.

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on which the vineyard stands. The Langhe, in fact, are a series of hills, the slopes of which are not all suitable for the planting of vines. Nowadays, the regulations for the production of Dolcetto di Diano d'Alba with a Designation of Controlled Origin prohibit the planting of vineyards on the slopes facing north (Disciplinare di produzione, 2). The reason why a similar term is not used in the Novara region lies in the fact that most of the vineyards are on a plateau. In fact, along the road to the Valsesia between Fara and Romagnano, where most of them are located, the hill rises suddenly, and although these slopes are home to very well exposed soils, immediately behind them lies the morainic plateau on which most of the Novara vineyards are situated. The latter, precisely because they are on a plateau, do not have a prevalent exposure. We thank Dr. Andrea Agnes of the Agricultural Sector of the Territory of Novara and of the V.C.O, Agriculture Department, Piedmont Region for the bibliographic information and for the reasons for the lack of use of the term *sörì* in the Novara region.

62 The main road that cut through Roman cities from south to north.

63 Motta, Novara medievale, 273.

64 Carlo Francesco Frasconi, Topografia antica di Novara e suoi sobborghi, in: Bollettino Storico per la Provincia di Novara 86 (1995), (Fonti) 1–262, 178–179. Furthermore Mario Crenna, In margine alla Topografia antica del Frasconi, in: Bollettino Storico per la Provincia di Novara 86 (1995), 845–872.

65 Frasconi, Topografia antica di Novara, 179.

66 The main road that cut through the roman cities from East to West.

Figure 5: Map of Novara from c. 1790

Source: Alberto Oliaro/Andreino Coppo, Novara. L'evoluzione urbanistica attraverso l'iconografia storica, Novara 1983, 29.

It is remarkable that twelve documents between 924 and 1000 AD[67] indicate the bishop as owner of eight farm holdings out of fourteen, all located in urban or suburban areas. Twice, the owner of the property turns out to be the *sancte Novariensis ecclesie* (the holy church of Novara). Of five properties with vineyards, three belonged to the bishop, one to the Novarese church, and one to a private owner. A document from 950 indicates the presence of a royal property near the market. The land, donated by Lothair II, king of Italy, to the rectory of St. Gaudentius, was surrounded by the public road and by properties belonging to the rectory of St. Mary.[68] The intramural area called "the vineyard of the king" or "royal vineyard", still owned by the cathedral chapter in the twelfth century, but no longer identifiable topographically, perhaps stems from this legacy.[69] The "royal vineyard" is also referred to in a document

67 Motta, Novara medievale, Appendice I, 324–325.
68 Luigi Schiaparelli, I diplomi di Ugo e Lotario, di Berengario II e di Adalberto, Roma 1924, 286–288.
69 Crenna, In margine alla Topografia antica, 860.

from 1003, when bishop Pietro cedes a piece of land "with walls and stones and buildings of houses within the city of Novara where it is called 'royal vineyard'".[70] The toponym reappears in 1122 when Attone, canon of St. Mary, is endowed, before bishop Litifredo, with two existing houses in Novara, one of which is within the vineyard "of the king".[71]

Documents from the eleventh century tell us that within the walls there was vacant land and that much of this was located near churches (St. Ursus, St. George, and St. Vincent), both within the walls and just outside, near the gates (St. Mary, St. Stephen, and St. Gaudentius).

Besides vineyards, other types of cultivation are mentioned in the sources. Near the gate of St. Agapius, attested by later documents of the fourteenth and fifteenth centuries, there were vineyards and many vegetable gardens bordering the defensive moat that surrounded the suburbs (*fossato seu circa*).[72]

In the tenth century a *buscalia* (a small wood?) is mentioned as the property of the bishop, near the gate of St. Agapius, while a document from 1182 refers to a *braida* (a suburban field, usually fenced) *castanea* in the court of Novara. Francesco Frasconi commented on this: "The addition of chestnut to our *braida* or *brera* can perhaps be taken from some existing chestnut grove in the countryside".[73]

It is also worth noting the existence of buildings and equipment related to agricultural work and production, such as warehouses,[74] stables,[75] mills located outside the walls,[76] ovens,[77] oil presses, crushers,[78] and so on. The latter are cited in a section of the statutes of Novara from 1277. The municipality, in fact, forbade the production of linseed oil, and more generally the use of crushers, within the city walls.[79] On the other hand, the statutes were also very strict in prescribing, for example, that those bringing animal feed into the city should unload it directly at the *broletto* (*bloretum*),[80] without straying from their path and without depositing it elsewhere.

The role played by the statutes in urban and extra-urban agriculture was fundamental.[81] Section 151, for example, forbade the planting of trees or reed beds inside or outside the city if the neighbour's property was less than four arms away (about 2.4 metres according to the Novara measurements).[82] It made an exception for vines, even if they were growing on

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70 Frasconi, Topografia antica di Novara, 157.

71 Ibid.; Motta, Novara medievale, Appendice I, 330.

72 Frasconi, Topografia antica di Novara, 168 and 170.

73 Ibid., 161 (translated from the Italian by the authors).

74 Ibid., 24 (caneva); Motta, Novara medievale, 289 and 292.

75 Frasconi, Topografia antica di Novara, 26.

76 Antonio Ceruti (ed.), Statuta Communis Novariae anno 1277 lata, Novara 1879, 68 ("Molendinarios Novariae") and 124.

77 Motta, Novara medievale, 332; Ceruti (ed.), Statuta Communis Novariae, 69.

78 Ceruti (ed.), Statuta Communis Novariae, 76, CLVI and 282 for the identification of *torcular* (press) with *maza*.

79 Ibid.

80 See "Bloreto Communis Mediolani" in: Isaia Ghiron, La credenza di Sant'Ambrogio, in: Archivio Storico Lombardo 4/1 (1877), 70–123, 109.

81 Merely as an example: Aldo A. Settia, Ambiente e vita associata negli statuti di Ozzano Monferrato (secolo XV), in: Andrea Terreni (ed.), Gli statuti di Ozzano Monferrato (1491), Ozzano Monferrato 2008, 15–24, especially paragraph a. L'agricoltura; Riccardo Rao, Il Monte di Bergamo e gli incolti collettivi della città (secoli XII–XIII), in: Riccardo Rao (ed.), Bergamo e la montagna nel Medioevo. Il territorio orobico fra città e poteri locali = Bergomum. Bollettino annuale della Civica Biblioteca Angelo Mai di Bergamo 104–105 (2009–2010), 51–74.

82 Giacomo Giovanetti, Degli Statuti novaresi commentario, Torino 1830, 214.

rural maple trees and fruit trees. It should be remembered that the authorities controlled the physical aspects of the city, both public and private, in detail: not only the urban gardens and crops inside and outside the walls, but also the fountains, wells, balconies, arcades, and so on.

The Novarese statutes also provided clear guidance about the produce that entered the city market: from fodder to legumes, from oats to barley, from spelt to broad beans. The city's merchants were also trading flax, oil,[83] wine, chestnuts, tallow, whey, fresh and salted meat, fresh and salted fish, bread, flour, bran, salt, and wood amongst other things – and, of course, all types of wild and farm animals. In particular, cattle were very important for the city's economy in the thirteenth century, both cows and calves;[84] and both for breeding and for their hides, the latter being used by the shoemakers' guild.

The statutes of Novara are also fundamental to understanding the impact of the city's agricultural policy on the countryside. Indeed, a difference can be seen between Chieri and Novara: while the former was a *de facto* city, it was not so in strict legal terms, and this perhaps made it more effective and quicker in dealing with problems; while Novara was characterised by a more deliberate approach, determined by its full urban status. Its need – and its responsibility – to confront other powerful municipalities, its expansion over a vast territory and its need to organise areas located a considerable distance from the city, all slowed it down and restricted it compared to the more "nimble" proto-city of Chieri.

The municipality of Novara, in fact, did not just control and organise urban and peri-urban agriculture, but also that of rural areas. It did this in various ways, protecting the crops, planning the excavation of canals, establishing grazing rights, and setting the dates for the harvesting of crops.[85] According to the statutes, within the *curia* of the city (the *poderium* – that is, up to three miles from the city itself), the task of protecting the gardens, fields, and vineyards was assigned to two officials, called *potestates campanee*,[86] for each city gate. They had to verify, evaluate, and compensate any damage to and destruction of crops, and they also had to choose at least four guardians of the gates. They were in charge of inspecting all those who attempted to enter through the city gates carrying wood, grass, hay, corn, or grapes, and detaining them unless the carrier came from his own property or was in possession of a permit (*eo quod liceat*).[87] The statutes also obliged the owners of vineyards in the *curia* to harvest after the feast of St. Michael, unless they were inside the circles of the villages that were adjacent to the city – that is, presumably, inside the ditches and embankments built to fortify the settlements that arose outside the city walls near the gates.[88] However, as regards the property of the citizens that was in the *ville* and suburbs, as well as that of the inhabitants of the countryside, it was guarded by the *campari*.[89]

It is clear that there was a profound relationship between the city and the countryside and that the decisions made in the city had an important impact on both rural and urban

83 Andrea Fabbri, The Olive in Northern Italy. A Mediterranean Tale, in: Rivista di Storia dell'Agricoltura 57/1 (2017), 25–56.

84 Ceruti (ed.), Statuta Communis Novariae, 160–162, CCCXXVII.

85 See above the section on Chieri.

86 Ceruti (ed.), Statuta Communis Novariae, 169, CCCXLVIII; but see also 41, LXXXVI, De dampno dato in curia Novarie emendando per comune Novarie.

87 Ibid., 170, CCCLI.

88 Ibid., 116, CCLXIX, De vindemiis curie Novarie.

89 Ibid., 81, CLXVII e CLXVIII.

agriculture. It is impossible to understand the organisation of urban agriculture without taking into consideration the decisions of the municipality regarding rural agriculture. Even today, indeed, it is not possible to understand urban agriculture in contemporary cities as a spontaneous phenomenon. It is profoundly connected to local policies; even to decisions taken at the highest levels, as shown by the case of the home garden at the White House. For the same reasons it is not possible to consider medieval urban agriculture as a phenomenon that comes into existence and continues spontaneously.

General conclusions

After having seen their urban functions (*civitas* and *municipium*) shrink or even disappear – because of the devastating conflicts that followed the fall of the Western Roman Empire –, and after a long period of slow but constant recovery, on the threshold of the Communal Age the medieval cities of northern Italy once again appeared as large and populous centres of production and consumption of goods and culture. Moreover, they were constantly experimenting with new forms of political and social organisation. This lively and changing urban civilisation placed the cities in the middle of large territories, where numerous smaller settlements with their own agricultural districts lay. These were coordinated and administered by the city authorities. Owning and governing the largest possible swath of countryside was an indispensable condition for every city not only to ensure its survival, but to achieve stable prosperity. A city's territory was composed of an inner suburban strip about three kilometres deep called *poderium* and of the county (*contado*) extending up to 100 kilometres out. It provided, first, the essential food supply for the urban population; second, the control and maintenance of the judicial independence of the urban municipality (also through the possibility of attracting many men to the army); third, the tax levy necessary to the municipal coffers; and fourth, the full functioning of urban markets, through the control of the road network and the signing of agreements with other urban centres (including transalpine cities) for the creation of a network of markets. In short, the well-being and power of the city and its inhabitants was guaranteed by a difficult and changing balance of factors. The first of these was undoubtedly a proper organisation of the countryside and crop choices. The comparative study of Chieri and Novara has highlighted the divergent transformations of the agricultural world in the course of time and the contrasting choices made in the organisation of the countryside. Those choices were motivated by both the different geographical location and quality of the soils occupied by the two urban districts, and by the different needs of the municipalities, an expression of their specific social compositions and economic organisations. In Chieri, the dominant class of financier-merchants were also the owners of the most extensive landed properties. Therefore, they were able to condition the structure of the countryside by experimenting with new forms of land lease and directing the choice of crops. This was done by resorting to new types of agricultural contracts for the specialised cultivation of grains for human consumption, of precious grapes, and of vegetable fibres for the production of fabrics. All these crops were designed to be distributed on the market. Livestock breeding was sacrificed, but the citizens of Chieri, thanks to a precise legal regulation established in the urban statutes, never suffered from food shortages, and their economic well-being grew at least until the end of the thirteenth century.

In contrast to this, at Novara, located between two large river channels and resurgences, the choice fell on the exploitation of the irrigated plain that extended to the outskirts of the city. There, the Novarese experimented with the water meadow (*marcita*) and with irrigated lands (*prati irrigui*) that allowed more harvests of hay per year, and the permanent rearing of cattle. This enabled them to vigorously relaunch the production of leather goods, and the guild (*universitas*) of shoemakers became prominent in the government of the city. The ruling classes of Novara assured a constant and adequate food supply to the citizens through the compilation of a legal corpus of rules, the statutes of the city, that also governed the surveillance, protection, and encouragement of agriculture.

Even within the circuit of the walls, the two cities made different choices. Chieri, on the one hand, had to regain an urban aspect and dignity in order to claim the political and jurisdictional prerogatives reserved for real cities. For this reason, and in order to better perform the task of mercantile and financial hub, the vegetable gardens, orchards, and gardens, while precious for the survival of citizens, were removed from the centre, which was densely built up around specialised market squares. Gardens and orchards were confined to the margins, first near the city walls, then close to the new outer defensive perimeter.

Here there was also a complex of urban farmsteads, the *airali*, for the shelter and processing of agricultural products from the countryside of Chieri, the port of Genoa, and the markets in northern Europe. Also because of the serious water shortage, on account of its location on sandy and calcareous soils, Chieri founded a new village (Villastellone) near the River Po, where the construction of water mills for the production of wool, hemp, and linen fabrics was concentrated.

Novara, on the other hand, preserving the urban layout of the imperial age as well as the dignity of a *civitas*, reused the spaces inside the blocks and near the churches and the urban monasteries to keep alive the ancient tradition of the cultivation of table grapes, vegetables, and fruit for daily needs. Instead of the *airali* belt, the people of Novara preferred to give space to large suburban vineyards, common gardens, and orchards within the walls, for the immediate satisfaction of daily food needs.

In conclusion, the construction of the circuit of the walls and urban moats made clear the intention of the citizens to operate an ideal separation of the refined and complex urban world from the rough mosaic of the surrounding countryside. Yet it is equally evident that at the same time they were fully aware of the essential bond that linked the city to its countryside in a single body. From the countryside flowed a vital flux of goods, just like the blood for the human body.

The turreted city gates were like open mouths by which, without interruption, people, food products, merchandise, culture, experiences, and techniques were entering and leaving. This is why the *cives* never stopped taking care of the countryside, this is why they worked hard to tie it inseparably to their cities and keep it alive and vital, from time to time transforming and reshaping it.

Henry R. French

"… a great hurt to many, and of advantage to very few"

Urban Common Lands, Civic Government, and the Problem of Resource Management in English Towns, 1500–1840

Abstract: This article will consider the relationship between the agrarian use-rights and political governance of urban common lands in English towns, in the period c. 1500–1840, and assess how far these common rights correspond to Elinor Ostrom's model of "Common Pool Resource" (CPR) management. It will review the most frequent varieties of common land and common rights held by the residents of English towns and argue that systems of commons management in English towns were always connected closely to urban political structures. Freemen, who were commons users in one context, were urban electors, defenders of corporate monopolies, or rent-seekers in other contexts. The governance, and the very survival, of urban commons could be affected by these additional imperatives. The defence of common rights often involved the assertion of a minority privilege, even if this was usually expressed in terms of a collective, or universal, civic right. Ironically, this defence was undermined fatally by the expansion of parliamentary and corporate electorates in the 1830s. When civic politics began to take account of the interests of a wider middle-class majority, the access privileges of borough freemen were swiftly abolished. These features mean that the longevity and eventual abolition of English urban commons conforms more closely to research by Sheilagh Ogilvie and Maïka De Keyzer about the "distributional effects" of unequal power relationships and external influences on economic institutions than to Ostrom's assumption that the survival of CPR management structures was determined ultimately by their economic efficiency.

Key Words: economic institutions, Common Pool Resource entitlement, Elinor Ostrom, urban agriculture, common lands, urban government

In England, historians' discussions of urban agricultural production and organisation between 1500 and 1800 often emphasise its economic marginality or depict it as a "rural" exception within the urban environment. Some attention has been paid to distinctive features of urban food production or provisioning, particularly market gardening and the supply of raw milk to urban markets. In general, though, towns have received more attention as centres of demand for agrarian produce than as locations where agrarian production or

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organisation was also important.[1] However, many English towns retained agrarian resources through this period. The most significant of these were often extensive common pastures or meadows, and (in some cases) unenclosed arable fields. Approximately 170 towns possessed these, ranging from large centres, such as Newcastle-upon-Tyne, Nottingham, or Leicester (each with 10,000 to 20,000 residents by 1750), to decaying small towns which had urban government systems but fewer than 1,000 inhabitants.[2] The historical development of these common lands remains poorly understood, as does the identity of their users. The dominant frame of reference for explaining the creation and longevity of common lands remains Elinor Ostrom's "Common Pool Resource" (CPR) model. This article assesses the applicability of that model to the development and eventual disappearance of English urban commons, and suggests that alternative, "distributional" approaches provide a better explanation, because their fate was decided more by changes in urban government structures and rights than by shifts in agricultural management regimes.

Urban commons and Common Pool Resource theories

Important recent research on English common lands by De Moor, Winchester, and Straughton has tended to interpret these lands by reference to Elinor Ostrom's highly influential model of CPR.[3] Although historians of rural commons have interrogated and modified Ostrom's conclusions, her theory continues to provide the primary interpretative template against which rural commons' management has been assessed. By contrast, the governance

1 Michael J. Winstanley, Industrialization and the small farm: family and household economy in nineteenth-century Lancashire, in: Past & Present 152/1 (1996), 157–195; Malcolm J. Thick, Market gardening in England and Wales, in: Joan Thirsk (ed.), The agrarian history of England and Wales, vol. 5: 1640–1750, Pt. 2., Cambridge 1985, 503–532; David H. Haney, Three acres and a cow? Small-scale agriculture as solution to urban impoverishment in Britain and Germany, 1880–1933, in: Dorothée Imbert (ed.), Food and the city: histories of culture and cultivation, Washington, DC 2015, 17–53; Malcolm Thick, Intensive rabbit production in London and nearby counties in the sixteenth, seventeenth, and eighteenth centuries: an alternative to alternative agriculture?, in: Agricultural History Review 64/1 (2016), 1–16; Malcolm Thick, The sale of produce from non-commercial gardens in late medieval and early modern England, in: Agricultural History Review 66/1 (2018), 1–17.

2 Estimates of the numbers of English towns possessed of common lands vary. English Heritage's 2009 gazetteer identified 316 town commons, but some of these settlements lacked urban functions or significant populations in the period 1500–1800. Mark Bowden/Graham Brown/Nicky Smith (eds.), An archaeology of town commons in England. "A very fair field indeed", Swindon 2009, 83–90. My estimates are based on Parliamentary returns from 1835 and 1870, plus evidence of towns with commons enclosed prior to that date.

3 Elinor Ostrom, Governing the commons: the evolution of institutions for collective action, Cambridge 1990; Angus J. L. Winchester, Common land in upland Britain: tragic unsustainability or utopian community resource?, in: Franz Bosbach/Jens Ivo Engels/Fiona Watson (eds.), Umwelt und Geschichte in Deutschland und Großbritannien: Environment and history in Britain and Germany (Prinz-Albert-Studien, vol. 24), Munich 2006, 61–76; Angus J. L. Winchester/Eleanor A. Straughton, Stints and sustainability: managing stock levels on common land in England, c.1600–2006, in: Agricultural History Review 58/1 (2010), 30–48; Christopher P. Rodgers/Eleanor A. Straughton/Angus J. L. Winchester (eds.), Contested common land: environmental governance past and present, London 2010; Tine De Moor, The dilemma of the commoners. Understanding the use of common-pool resources in long-term perspective, Cambridge 2015; Tine De Moor et al., Ruling the commons. Introducing a new methodology for the analysis of historical commons, in: International Journal of the Commons 10/2 (2016), 529–588.

structures of English *urban* commons are much less well understood and have generally been interpreted without reference to Ostrom's ideas.[4]

Ostrom contradicted Garrett Hardin's theory of the "tragedy of the commons" (destruction caused by unregulated usage), by showing how the commoners' desires to maximise the individual benefit of a shared CPR could be reconciled with the creation of self-regulating governance structures that prevented collective over-exploitation.[5] She argued that effective communal regulation of a CPR usually involved a series of criteria designed to maximise the economic efficiency of these assets.[6] The users of the CPR needed to be defined clearly, as did the boundaries of the resource itself. The rules governing the use of this resource had to be adapted to its specific attributes or local conditions and to the defined body of users. To secure compliance, these users had to have a role in designing or approving these rules, and the rules had to be enforced by individuals who belonged, or were accountable, to the body of users. These rules had to be proportionate and needed to be enforced through a graduated series of punishments related to the severity of the infractions. If enforcement failed, users or rule-enforcers required effective, efficient, and low-cost means of resolving disputes, and the body of users needed sufficient autonomy from outside influence to revise their rules as and when necessary. In larger organisations, these functions needed to operate effectively by being conducted within the appropriate organisational layer or authority.

Ostrom's assumption is that acceptance of this self-regulation is driven by the efficiency of the economic "institution" created to manage the process. She suggests that users were likely to adhere to these practices only as long as the perceived benefits of collective self-regulation outweighed those available in a free-for-all. Effective self-regulation was necessary to prevent individual users breaking the rules with impunity, and to deter them from retaliating without being sanctioned by all users collectively. Ostrom explains that a number of elements affected the economic efficiency of such self-regulating bodies. These included the total number of decision makers, whose number or representativeness could affect the degree of consent accorded to their decisions. It was also influenced by what Ostrom called the "discount rate", that is, the perceived damage to users' interests that would follow from over-exploitation of the resource or from the failure of the current system of governance.[7] Another phrase for this might be the perceived "deterrent effect" created by the prospect of the loss of this resource. Finally, Ostrom's experience of such systems in practice led her to argue that at least some of the users needed to possess substantial leadership skills or organisational abilities.[8]

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4 Henry R. French, Urban agriculture, commons and commoners in the seventeenth and eighteenth centuries: the case of Sudbury, Suffolk, in: Agricultural History Review 48/2 (2000), 171–199; Henry R. French, Urban common rights, enclosure and the market: Clitheroe Town Moors, 1764–1802, in: Agricultural History Review 51/1 (2003), 40–68, 57–58; Bowden et. al., Archaeology; Henry R. French, The common fields of urban England: communal agriculture and the "politics of entitlement", 1500–1750, in: Richard W. Hoyle (ed.), Custom, improvement and the landscape in early modern Britain, Farnham 2011, 149–174.

5 Garrett Hardin, The tragedy of the commons, in: Science 162 (1968), 1243–1248.

6 Ostrom, Governing the commons, 185–207.

7 Ibid., 34–35.

8 Ibid., 195–204.

Some potential problems

Ostrom's hypothesis outlines why it would be in the collective self-interest of CPR users to limit their individual property entitlements and agree governing structures with sanctions that provided effective enforcement. From a historical perspective, however, Ostrom's theory has two potential problems. De Moor complains that Ostrom does not explain how such a governance system would be reproduced through time, and why a solution that proved efficient for one generation would continue to be so in subsequent ones.[9] De Moor's solution to this problem is essentially functional – she argues that particular governance structures were preserved as long as they were effective in apportioning and managing these resources.[10] Her subsequent research has focused on identifying and categorising the formal rules of governance of common lands, and has formulated a sophisticated methodology for the comparative analysis of these operational rules across Europe.[11] However, her focus is on commons as resources governed primarily by "bottom-up" regulations made by their users, and she suggests that the manorial systems used to manage most English commons were distorted by "top-down" seigneurial interference. Certainly, landlord influence was always a feature of English manorial government, and was also felt in many smaller English towns, where relatively weak governing bodies were no match for neighbouring landowners.

However, this observation raises a much deeper objection to the underlying assumptions of the CPR model, noted in passing by De Moor, but articulated with great clarity by Sheilagh Ogilvie.[12] For De Moor, the rules governing the management of commons remained "a set of institutions whose satisfactory (if not successful) performance" explained their survival.[13] By contrast, Ogilvie disputes the view that economic "institutions" (such as systems for managing commons) survived primarily because of their economic efficiency or utility. She argues that institutions may reflect and perpetuate very unequal distributions of economic, social, political, legal, and patriarchal power, in ways that were decidedly *inefficient* in economic terms. In this view institutions that perpetuated common lands might exist, "not because they maximised the economic pie, but because they distributed large shares of a limited pie to village elites (well-off peasants, male household heads), with fiscal, military, and regulatory side-benefits to rulers and overlords".[14] Such an interpretation also addresses a point about "institutional externalities" mentioned only in passing by Ostrom – that is, CPRs always exist within other systems of power and authority, and are subject to influence by the distributions of power found within them.[15]

The influence of differences in economic, social, and political bargaining power on CPRs has been explored most effectively by Maïka De Keyzer through detailed comparative research on access to light-soil common lands in the English county of Norfolk, the

9 Ibid., 202.
10 De Moor, Dilemma of the commoners, 46–49.
11 De Moor et al., Ruling the commons, 539–351.
12 Sheilagh Ogilvie, "Whatever is, is right"? Economic institutions in pre-industrial Europe, in: Economic History Review, New Series, 60/4 (2007), 649–684.
13 De Moor et al., Ruling the commons, 535.
14 Ogilvie, "Whatever is, is right"?, 663.
15 Ostrom, Governing the commons, 190.

Campine region of the Southern Netherlands, and the Geest area of Schleswig-Holstein.[16] De Keyzer demonstrates that the different distributions of power found in each area determined the long-term development of each system of commons management, and that these were not always embedded in formal "institutional" rules.[17] The Campine region had the most stable balance of interests between commons users and the most inclusive distribution of common resources. In Norfolk, the economic dominance of lords subverted the use of communal fold-courses after the Black Death, without requiring changes in their rules, while in Schleswig-Holstein, small groups of elite peasant *Hüfner* came to dominate the management system, rewriting the rules to restrict or exclude labourers and smallholders. De Keyzer concludes that: "Historical rural communities were thus fundamentally shaped by their specific distribution of power, and the stakeholders used both formal and informal institutions to determine and change the access rights to the commons and therewith safeguard their particular interests."[18]

Such "distributional effects" and "institutional externalities" appear better suited to explain the fate of urban commons in many of the larger English towns which were under the control of autonomous borough governments. In these towns the decisive factor was the generally strong links between the bodies that governed the town, particularly corporations of freemen or burgesses operating under royal charters, and those that regulated access to CPRs such as pasture commons or seasonal grazing rights. Such links bound these urban commons into structures of civic government that supported "external" political or partisan interests, particularly in relation to electoral politics at Westminster. The fact that commons in the larger English boroughs were swept away primarily by liberal campaigns of *political*, rather than agrarian, reform in the 1830s and 1840s, suggests that these "distributional considerations" are worth investigating in greater depth.

Outline

In order to understand these changes, this article will explore the important relationships between the agrarian and political governance of urban common lands in English towns, in the period c. 1500–1840. It will focus on three aspects of their governance from the sixteenth to the mid-nineteenth century. Firstly, the article will review the most frequent varieties of common land and common rights held by the residents of English towns. Secondly, it will discuss the most frequent forms of governance, and how regulations were sometimes subverted in practice. Thirdly, it will explain the main changes over time in these forms of governance, and the importance of interactions between agrarian and political rights in the processes by which urban common rights were restricted and eventually extinguished.

16 Maïka De Keyzer, The impact of different distributions of power on access rights to the common wastelands: the Campine, Brecklands and Geest compared, in: Journal of Institutional Economics 9/4 (2013), 517–542.
17 Ibid., 531.
18 Ibid., 538.

Varieties of urban commons and commons users

Types of urban commons

In the Early Modern period, English towns were either corporate or non-corporate in structure. Corporate towns possessed or claimed systems of government, collective rights, and ownership of resources based on legal charters issued originally by feudal lords, the church, or (most frequently) by the Crown. Their charters normally defined the geographical limits of the urban jurisdiction, and the ownership and management rights of this land were usually vested in the "corporation" (a fictive legal person comprised of the entire body of those accorded civic rights within the town, usually termed "burgesses" or "freemen"), but sometimes concentrated in the hands of the governing elite of senior "burgesses" or "aldermen". As the mayor of Leicester stated in 1822, the corporation possessed the same ownership rights as an individual person over its lands and estates, and "had by law as free and ample dominion as any individual over his own property".[19] Crucially, although corporations governed in the name of their constituent members, over time these comprised a smaller and smaller minority of all resident male householders. Non-corporate towns retained rural systems of government and land management in which land was held by an individual lord and managed through the institutions of the manor or the ecclesiastical parish.[20] Formally, these common resources (such as common pastures) belonged to the manorial lord, and use-rights were reserved only to the manorial tenants, under the medieval Statutes of Merton (1235) and Westminster (1285).[21] Winchester has pointed out that although, in legal theory, collective common rights *derived from* tenants' possession of individual properties within the manor, individuals could also possess rights of common separate from these (particularly rights of "vicinage" possessed by tenants of neighbouring manors). In practice, corporate and non-corporate towns evolved similar systems of commons entitlement and management: use-rights were concentrated in the hands of corporate burgesses and manorial tenants; management was conducted by an oligarchic town corporation, or its manorial or parochial governing equivalents.[22]

The nineteenth-century historian F. W. Maitland distinguished between two main types of common rights exercised by urban dwellers in England.[23] One the one hand, he identified "burgensic users in common", that is, access and use-rights held and exercised *through a corporate body* by all suitably qualified residents – the obvious example would be rights to pasture animals on a common held by a corporate body, such as a borough corporation, or the whole of the freemen together.[24] On the other hand, he distinguished these from the rights of

19 Derek Fraser (ed.), Municipal reform and the industrial city, Leicester 1982, 4.

20 Rosemary Sweet, The English town 1680–1840: government, society and culture, Harlow 1999, 28–37.

21 Angus J. L. Winchester, Property rights, "good neighbourhood" and sustainability: the management of common land in England and Wales, 1235–1965, in: Bas van Bavel/Erik Thoen (eds.), Rural societies and environments at risk. Ecology, property rights and social organisation in fragile areas (Middle Ages–Twentieth Century), Turnhout 2013, 309–329, 311.

22 Ibid., 311–314.

23 Frederic W. Maitland, Township and borough, Cambridge 1898, 198.

24 Maitland gave as examples the boroughs of Oxford, Worcester, Beverley, Northampton, Shrewsbury, Grimsby, Hartlepool, Lancaster, Morpeth, and Newcastle-upon-Tyne in England, and Haverfordwest and Pembroke in Wales. Maitland, Township, 198.

"burgensic users in severalty", where rights were held *individually* by burgesses (usually in the form of leases) in relation to "land of which the corporation was owner" – examples of this would be Malmesbury, Wiltshire, where in the early nineteenth century each freeman was granted a life-interest in a one-acre plot, out of 280 acres held by trustees; or sixteenth-century Tewkesbury, where strips in the open field of Oldbury, east of the town, were reserved for individual burgesses.[25] Few towns conferred such individual access or use-rights, and these lands did not really amount to a CPR because although the property was owned collectively it was divided into individual parcels and cultivated separately.

"Burgensic users in common" exercised at least three separate forms of common rights in corporate and non-corporate towns. The most obvious was access to pasture commons located entirely within the town boundaries, administered exclusively by corporations or other town authorities (courts leet and parochial vestries), and determined directly by the possession of rights of civic freedom, freehold property ownership, or rate-paying solely within that jurisdiction. Such qualifications could also govern "vicinage", access to use-rights on land not owned exclusively by the corporate body – that is, to "Lammas land", collective seasonal grazing rights exercised after harvest, on plots or farms often owned or let to individuals, and frequently straddling the borough boundaries. Finally, town-dwellers could also exercise seasonal grazing rights in neighbouring parishes and manors, by sharing access to the fallows or after-crop in the open fields or pastures, moors or heaths with tenants of these external manors. In this case, non-resident urban burgesses might exercise their collective rights alongside resident manorial tenants whose rights were held individually. Many towns possessed all three types of rights, as will be shown below in relation to the City of York.

In each case, the resources in question conform relatively closely to Ostrom's definition of a CPR. Rights were exercised either over a bounded, defined resource owned collectively by the corporation (or by manors within non-corporate towns), or consisted of identifiable grazing rights exercised over properties inside or outside urban legal boundaries. England's dense network of legal jurisdictions made it relatively easy for commoners to define rights, regulate access, and impose punishments both through the institutions of civic government (borough corporations, civic courts, and urban manorial courts leet) and by recourse to equity litigation in the royal courts of Common Pleas, Chancery, Exchequer, and Star Chamber. The main way in which urban commons deviated from Ostrom's model was in terms of the identity of their users: generally, because rights were restricted to free burgesses, manorial tenants, or ratepayers, only a small *minority* of the total number of urban dwellers were able to pasture cows or horses. In this respect, the "distributional considerations" mentioned above appear to have been built into the governance and power structures of most English commons, whether urban or rural, by the seventeenth century.[26] The situation was even more pronounced in English boroughs and towns where rights of freedom were governed by royal charters or by custom. At the turn of the nineteenth century, even in the largest boroughs

25 First report of the commissioners appointed to inquire into the municipal corporations in England and Wales, appendix, London 1835, part 1, 78–80; Victoria County History (VCH) of Gloucestershire, vol. 8, ed. Christopher R. Elrington, Oxford 1968, 137–139.

26 Angus J. L. Winchester, Upland commons in northern England, in: Martina De Moor et. al. (eds.), The management of common land in north-west Europe, c. 1500–1850, Turnhout 2002, 33–58, 53; Leigh Shaw-Taylor, The management of common land in the lowlands of southern England circa 1500 to circa 1850, in: De Moor et. al. (eds.), Management of common land, 59–86, 64–68.

with the most inclusive franchises (such as Nottingham, Preston, or York), qualified freemen comprised only 10 to 20 percent of the total urban population.[27] Consequently, this analysis must begin by recognising that for centuries English towns had avoided Hardin's "tragedy of the commons" simply by excluding the great majority of their residents from access to these resources in the first place. In this respect, urban commons appear to have conformed quite closely to Ogilvie's more nuanced view that "the pre-industrial economy […] was characterized by 'limited-access' institutions that coercively limited economic entry in order to create rents for the powerful, while excluding the mass of economic agents".[28]

The relationship between types of commons and practices of urban governance in English towns

The rights of commons users were a function of the forms of urban government in which they participated. Formal codified "custumals" (lists of regulations or bylaws) are very rare for English urban commons, because operational decisions about the use of commons and punishment of transgressions were recorded much more often within council minutes, manorial court judgements, or reports to Parliament (in the nineteenth century). Consequently, the management practices and governance structures have to be reconstructed from numerous fragmentary references.

By the end of the urban enclosure process in 1870, Parliament reported on surviving common lands in 56 English boroughs. Access to 42 of these urban commons was restricted to those who possessed formal rights of freedom (gained by inheritance and/or having served an apprenticeship, or "by co-option" after paying a fine to be admitted), with the remaining 14 being open to a wider body of ratepayers.[29] However, this was the situation after the reform of English borough government in 1835, when most existing town charters were revoked and many new grants were made to large cities such as Birmingham, Sheffield, and Manchester, that had not previously possessed urban corporate governments. One of the purposes of these reforms was to open up participation in civic government to a wider body of middle-class electors qualified through a defined property franchise, so as to end earlier restrictive, oligarchical, or corrupt rights of civic "freedom" based on apprenticeship, purchase, or patronage.[30]

Before 1835 there were four main regional variations in types of common resources and associated governing structures. In the northwest of England, there were a series of small market towns, some old-established, some new and expanding, which retained their

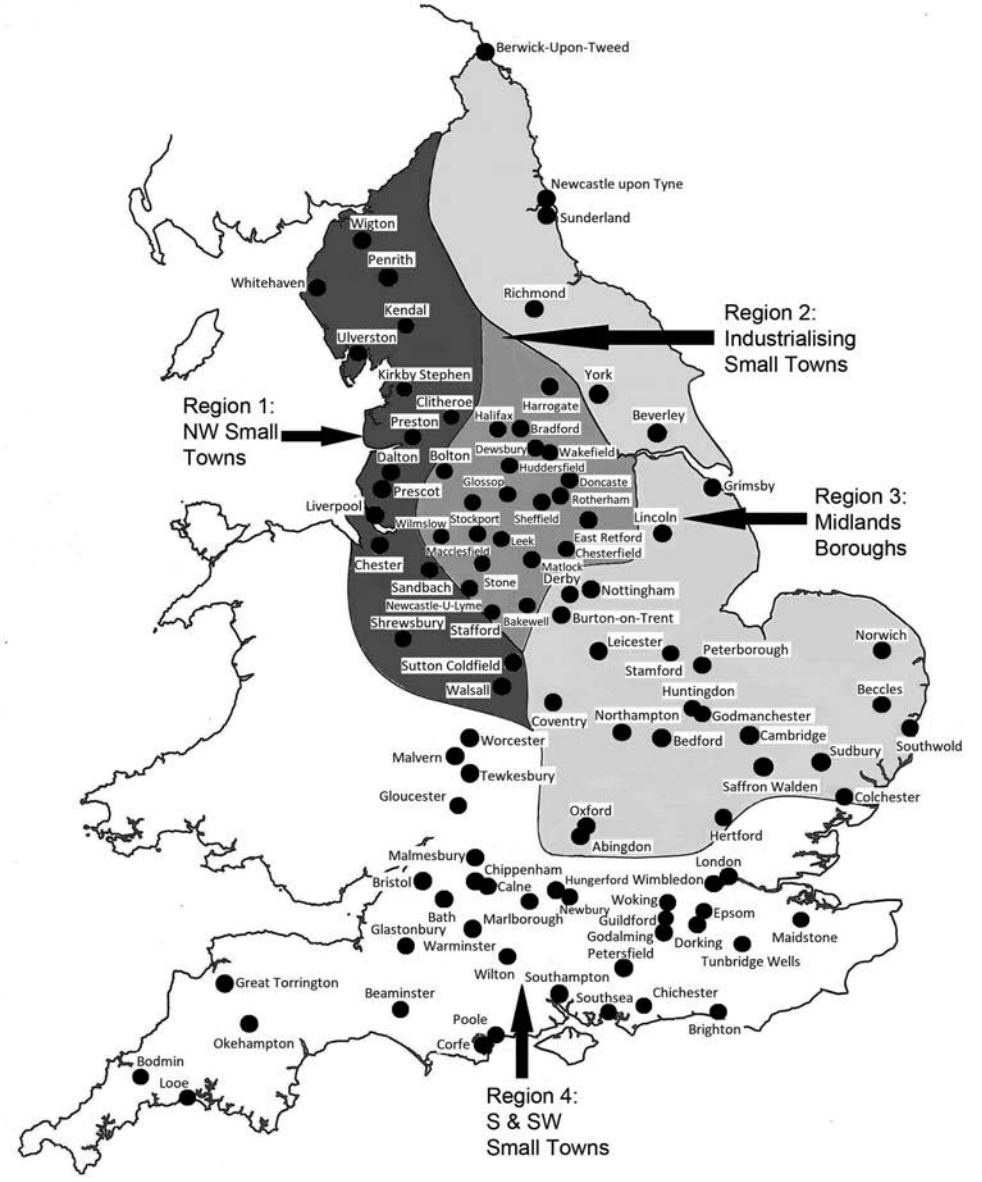
27 In 1801, Nottingham had 2–4,000 voters out of a population of 28,462; in 1796 Preston had 1,500 voters, and in 1801 its population was 11,887; and York had c. 2,500 voters out of a population of 16,846 in 1801. R. G. Thorne (ed.), The House of Commons 1790–1820, vol. 2: Constituencies, London 1986, 317, 235, 461.

28 Ogilvie, "Whatever is, is right"?, 671.

29 Derived from House of Commons Papers 448 (1870), "Return of all boroughs and cities in the United Kingdom possessing common or other lands…", 3–31.

30 For example, in Sunderland prior to 1835, access to 47 acres called "The Moor" had been controlled by a group called the Freemen and Stallingers (that is, people with a right to trade in the town's market). After the municipal reforms, the Freemen and Stallingers challenged the new corporation's right to control these lands, and a court case determined that they had never been a legal corporate body before 1835, so their assets could not be transferred to the new council! House of Commons Papers 465 (1840), "Report of the Select Committee on Freemen of Cities and Boroughs", xiii–xiv.

Figure 1: Map of English urban commons regions



Source: Adapted from Figure 1.2 in Mark Bowden/Graham Brown/Nicky Smith, An Archaeology of Town Commons in England. 'A Very Fair Field Indeed', Swindon 2009, 4.

common pasture and arable lands largely within their town boundaries.[31] In general, these towns had manorial forms of government, rather than corporate borough systems based on royal charters, because urban growth had remained slow here until the mid-eighteenth century. These towns included Penrith, Whitehaven, and Wigton in Cumberland; Kendal and Kirkby Stephen in Westmoreland; Dalton, Ulverston, Clitheroe, and Prescot in Lancashire; Stockport, Wilmslow, Macclesfield, and Sandbach in Cheshire.[32] The preservation of their commons and open arable fields reflected their continuing integration with the agrarian economy of the region until the end of the eighteenth century. Rights in these towns conformed more closely to the manorial rights defined in the Statute of Merton. Maitland observed that only in boroughs "of the lowest order" were pasture rights connected to particular properties, rights of common held from or shared with manorial lords, or exercised by "inhabitants" rather than burgesses, largely independent of the corporation's authority.[33] In some other towns, common rights were vested in the owners or tenants of "burgage" properties (real estate), rather than being held by individuals as ratepayers. This occurred in Hertford, Basingstoke, Godmanchester, Congleton, Richmond, and Clitheroe.[34] In the last two of these, the holders of the burgages also had the right to vote in Parliamentary elections.[35] Although such rights could sometimes be subdivided or sublet, the number of burgages was usually finite and established by local custom. Consequently, as a town grew there were normally many fewer qualified burgages than there were extant houses or households. In Clitheroe, for example, there were 127 burgage properties in the 1780s, but at least 250 households in the town.[36]

The second region of urban commons in the north was the largely upland, industrialising zone stretching from the West Riding of Yorkshire through the Derbyshire Peak into the Staffordshire moorlands and Shropshire. It included towns such as Rotherham, Doncaster, Halifax, Sheffield, Wakefield, Dewsbury, and Huddersfield in Yorkshire; Matlock, Bakewell, Glossop, and Chesterfield in Derbyshire; and Leek, Newcastle-under-Lyme, Burton-on-Trent, Stone, Stafford, and Walsall in Staffordshire.[37] Once again, these towns had manorial systems of government rather than corporate rights. These structures struggled to cope as their populations and industrial capacity expanded very rapidly after 1760, leading to the urbanisation of previously small, sparsely populated, largely rural townships. As a consequence, enclosure in this region involved disaggregating tracts of moorland, which formed manorial wastes shared with rural manors, and the clearer demarcation of boundaries between townships, as

31 G. Elliott, Field systems of north-west England, in: Alan R. H. Baker/Robin A. Butlin (eds.), Studies of field systems in the British Isles, Cambridge 1973, 41–92, 54.

32 House of Commons Papers 399 (1914), Return "in chronological order of all acts passed for the inclosure of commons or waste lands, separately, in England and Wales…", 12–14, 70–72, 28–30, 11–12.

33 Maitland, Township, 199.

34 Victoria County History of Hertfordshire, vol. 3, ed. William Page, London 1912, 498; First report municipal corporations, appendix 1, part 2, 1106 (Basingstoke); part 4, 2237 (Godmanchester); part 4, 2652 (Congleton); part 4, 1695 (Richmond); Eveline Cruikshanks et. al. (eds.), The House of Commons 1690–1715, vol. 2: Constituencies, Cambridge 2002, 743–745; Henry R. French, The creation of a pocket borough in Clitheroe, Lancashire, 1693–1780: "Honour and Odd Tricks", in: Northern History 41/2 (2004), 1–26.

35 See House of Commons Papers 82 (1867), "Alphabetical List of Boroughs in England and Wales previous to Reform Bill of 1832, stating nature of Suffrage".

36 French, Urban common rights, 57–58.

37 House of Commons Papers 399 (1914), 77–88, 14–16, 61–63.

well as restrictions on tenants' freedom to take game, wood, or turf. For example, the parish of Doncaster was 8,660 acres at enclosure in 1765; in Wakefield, 2,634 acres were enclosed between 1793 and 1805.[38] These enclosures were driven primarily by the interests of local landowners, and although they curtailed the access rights of manorial tenants, population growth driven by in-migration meant that most inhabitants did not possess these rights at the time of enclosure.

The third region comprised a series of old-established, relatively populous, corporate borough towns that existed within the Midland open-field region – towns such as Coventry, Warwick, Leicester, Nottingham, Northampton, Huntingdon, Hertford, Bedford, and Cambridge.[39] Most were centres of legal administration (assize towns), most had complex and long-established forms of borough government based on royal charters, and all were quite important reservoirs of distinctively "urban" functions: manufacturing, marketing, retail, education, service industries, leisure facilities, and so on. More importantly, it was in this group of large towns that the relationship between collective civic rights and common rights was strongest. These towns generally had inclusive and extensive forms of civic government, the largest numbers of freemen, and the largest numbers of commons users. Maitland noted their "political" significance, and observed that all were old "shire-boroughs" – that is (except for Coventry), they all gave their names to their "shires" (or counties), and all had extended histories as centres of county administration.[40] Using this definition, Maitland also included Oxford, Lincoln, Colchester (shire capital of Essex until 1250), Durham, Gloucester, and York.[41] We might also include the developing regional centres of Southampton, Newcastle-upon-Tyne, and Preston.[42] These Midland shire-boroughs often had some of the largest electorates and most widespread rights of common. For example, in Nottingham there were 50,220 inhabitants in 1831 and 2,295 resident freemen with common rights, with a further 590 living within seven miles of the town, while in the smaller chartered borough of Beverley, East Yorkshire, the population was 8,263 with 1,476 corporation members in 1831.

The fourth region consisted largely of a disparate series of small manorial boroughs and non-corporate towns in southern and south-west England, whose population levels, economic importance, and political significance had declined since the fourteenth century, and in which there were relatively weak forms of urban government, run by exclusive and small governing bodies. Their internal government structures were very similar to the north-west region, but unlike the politically disenfranchised north-west, most of these southern towns were also represented in Parliament. This distribution reflected the fossilised remains of late medieval patterns of population and economic power. In 1835, the Municipal Corporations Commissioners found that many tiny "corporations" were barely towns at all, in terms of their

38 House of Commons Papers 85 (1874), "Return of Acreage of Waste Lands subject to Rights of Common, Common Field Lands…", 257; John F. Broadbent, Dewsbury inclosure 1796–1806, in: Yorkshire Archaeological Journal 69 (1997), 209–266.

39 House of Commons Papers 85 (1874), 3–31.

40 Maitland, Township, 201.

41 Ibid.

42 Alfred Temple Patterson, A history of Southampton 1700–1914, 3 vols, Southampton 1966–75, I, 11; Anthony Hewitson, History of Preston, Preston 1883, 326–329; E. Halcrow, The town moor of Newcastle-upon-Tyne, in: Archaeologia Aeliana, 4th series, 31 (1953), 149–164.

population size, density of settlement, or governmental structures.[43] Some of these, such as Calne in Wiltshire (with 2,640 residents, 14 burgesses, and rights of common), were unable to produce a royal charter for the commissioners.[44] Many such towns possessed commons and common rights, including Chippenham, Marlborough, and Malmesbury in Wiltshire, Okehampton in Devon, Bodmin in Cornwall, Arundel in Sussex, Basingstoke and Christchurch in Hampshire, Godmanchester in Cambridgeshire, Beccles and Southwold in Suffolk.[45] In a number of these smaller towns all rate-paying householders were granted access to common lands, subject to paying a fee.[46] In 1835, ratepayers had access to commons in Chester, Lincoln, Cambridge, Beccles, Sutton Coldfield, Lancaster, Arundel, Okehampton, Bodmin, and Marlborough.[47] This was an important variation, because (in theory) it opened up access to the commons to more people than were likely to have possessed formal rights of civic freedom.

In Figure 2, these towns have been arranged on axes taken from De Keyzer's analysis of the relationship between the local balance of power and access to the CPR. As has been suggested above, almost all of these towns possessed unequal power structures in the bodies managing their commons, in which wealthier residents exercised disproportionate influence. However, the figure also indicates that access to commons varied, primarily according to the size of the resource. Thus, most southern English towns had very small areas of common lands and quite restrictive access rules, while upland, industrialising towns in West Yorkshire often had very expansive, unregulated common pastures, but these were restricted or abolished by enclosure. Towns in the north-west often had significant areas of common, but could control these quite restrictively, while the larger Midland boroughs had very hierarchical systems of government, but often had both extensive arable common fields and pastures, and significant numbers of commons users, although usage restrictions varied considerably.

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43 First report municipal corporations, appendix 1, part 1, vol. xxiii, 122 (Nottingham); 116 (Beverley). However, Langton noted that there were 956 towns in total in England in 1841. John Langton, Urban growth and economic change: from the late seventeenth century to 1841, in: Peter Clark (ed.), The Cambridge urban history of Britain, vol. 2: 1540–1840, Cambridge 2000, 451–490, 466.

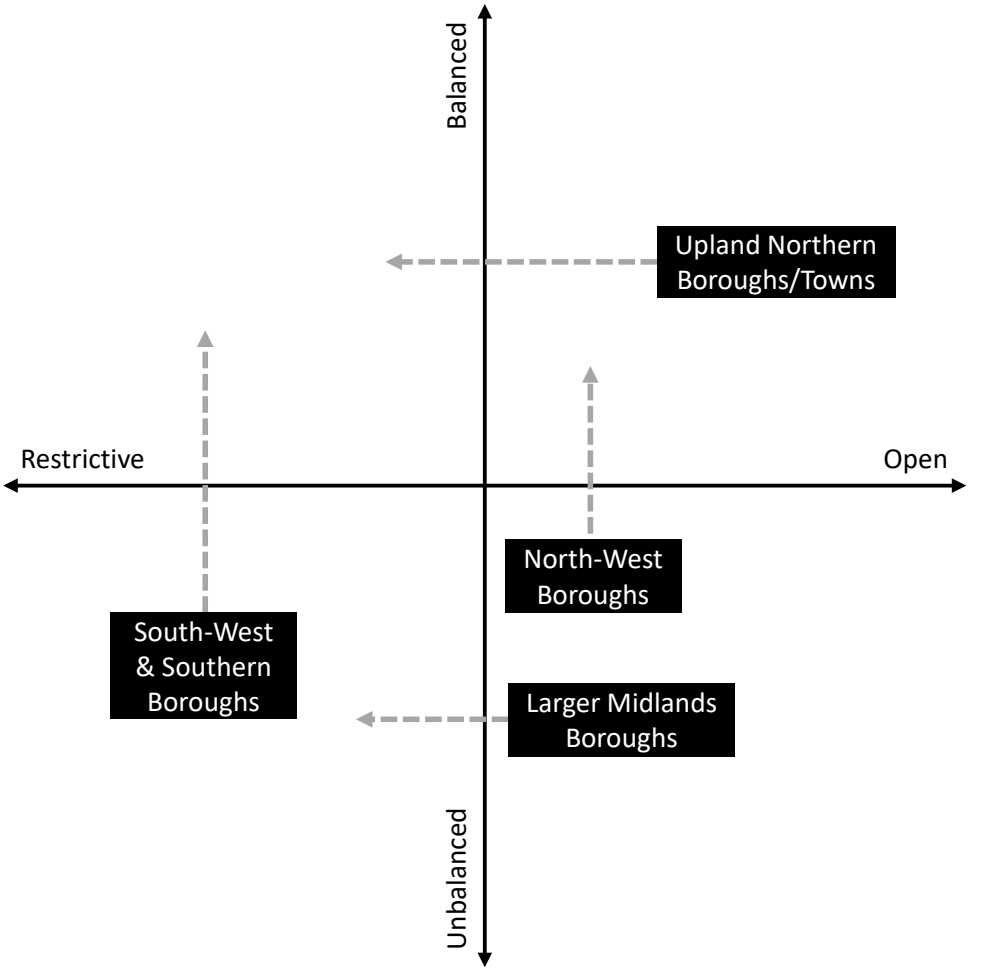
44 Ibid. (Calne), 114.

45 Derek Hirst, The representative of the people? Voters and voting in England under the early Stuarts, Cambridge 1975, 198; A. R. Steedman, Marlborough and the Upper Kennet Country, Marlborough 1960, 98–99, 122, 270; First report municipal corporations, appendix 1, part 1, 78–79 (Malmesbury); part 1, 447 (Bodmin); part 4, 2236–2237 (Godmanchester); part 4, 2193 (Beccles); part 4, 2517 (Southwold); W. G. Hoskins/H. P. R. Finberg, Devonshire Studies, London 1952, 284–285; Victoria County History of Sussex, vol. 5, part 1, ed. T. P. Hudson, Oxford 1997, 57–58; L. Ellis Tavener, The common lands of Hampshire, London/Southampton 1957, 52–53, 55–58; VCH Hertfordshire, vol. 3, 498.

46 This was despite the fact that after Gateward's Case (1607), the Common Law explicitly excluded non-property-owning ratepayers from use-rights to common land. Winchester, Property rights, 313.

47 First report municipal corporations, appendix 1, part 4, 2627 (Chester); part 4, 2357 (Lincoln); part 4, 2204 (Cambridge); part 4, 2193 (Beccles); part 3, 2034 (Sutton Coldfield); part 3, 1660 (Lancaster); part 2, 673 (Arundel); part 1, 559 (Okehampton); part 1, 447 (Bodmin); part 1, 83 (Marlborough).

Figure 2: Relationship between balance of power and access to commons in English boroughs, c. 1500–1800



Source: Own illustration.

How did rights of common operate in practice?

Unrestricted rights to pasture animals tended to survive only where commons were extremely extensive moorland wastes, so that the chances of over-exploitation were very small. Consequently, urban residents retained unrestricted pasture rights only in towns embedded within very extensive upland parishes, such as those in Sheffield, Doncaster, or Wakefield, noted above. In addition, at Doncaster, the freemen enjoyed unstinted access to a further 142 acres

within the town during the summer, and to the grass on 61 acres of meadow, which was said to last barely a week or ten days in 1835.[48]

The most frequent restriction on access was the imposition of seasonal closures, so-called "Lammas" grazing rights. In 15 out of a sample of 33 urban pasture commons, these rights of grazing were restricted to the period after Lammas Day (or "Loaf-Mass"), celebrated on 1 August – that is, after the cutting of the arable harvest or the taking-in of the first hay crop. In 19 of the 33, these rights extended to Candlemas Day (2 February). The main variations were for grazing rights to extend from St. Helen's Day (3 May/early May), in a further six instances, to as late as Ladyday (25 March), in a further seven cases, generally in places where an early hay crop was taken. Such seasonal restrictions reduced the effective acreage of these "commoned" lands to half or two-thirds their nominal area, limiting the numbers of animals that could be pastured on them annually. However, they enabled such rights to be extended temporarily beyond the boundaries of the permanent pasture commons. The price of such flexibility was that these Lammas rights often sparked vigorous and recurrent disputes between the owners of the land, freemen who wanted to exercise common rights, and sometimes residents outside the town who also had competing grazing rights in these fields. Lammas rights introduced a degree of uncertainty over entitlements and competition between rival jurisdictions and users that weakened the sufficiency of the management systems of these CPRs.

In addition to seasonal prohibitions, freemen's rights were normally also restricted to a certain number of animals per capita, and they were usually charged a fee to pasture them each year. "Stints" (number controls) and fees varied widely from year to year. In one sense, this was because most commons management systems were very responsive to short-term changes in demand for pasture, and reasonably effective in preventing large-scale over-stocking. However, monetary charges were usually not fixed by custom, unlike many other sources of corporate revenue. This meant that charges for common rights could be increased to try to meet the borough's immediate demands for money, or to provide income for particular charities, or for needy freemen or their widows. My previous research on Sudbury, Suffolk, showed how in the early eighteenth century the corporation used price mechanisms, rather than formal "stints", to change the use of the commons in quite subtle ways. Between 1710 and 1714 (a period of economic hardship), they increased the fines for pasturing two animals faster than the fines for pasturing one. This maximised the opportunities for owners of one animal, with between 125 and 135 people pasturing between 146 and 155 animals. Over the next decade, they decreased the fines, particularly on pasturing two animals. The numbers of commons users stayed about the same, but the numbers of animals increased by 30 to 40 per annum, favouring users with more than one animal.[49]

However, in practice stinting and fees might have little to do with the control of access rights to preserve pasture resources. In Southwold, Suffolk, townsmen paid 1 shilling 3 pence per head of cattle until 1813. Over the next fifteen years, the fee was changed repeatedly, to help offset the poor rates or repay borough debts. By 1828, the fee for cattle had been raised

48 First report municipal corporations, appendix 1, part 3, 1500.

49 French, Urban agriculture, 185–190.

to 12 shillings per head – an increase of almost 1,000 percent compared to 1813! Few of these moves reflected the desire to manage the commons more efficiently or equitably.[50]

Urban corporations were hierarchical bodies within a very unequal society, and we might therefore expect that rights of common would reflect these distributions of power and authority. However, it was very rare for senior members of urban corporations, such as aldermen or common councillors, to be given larger entitlements than ordinary freemen. This may indicate the working of Ostrom's principle that the rules had to be set by (or at least with the knowledge of) the users and enforced by individuals who belonged to, or were accountable to, this group. Consequently, even in hierarchical borough governments it may have been politically difficult for the aldermanic elite to justify taking a larger share of a resource supposedly open to all freemen. However, they may have secured a distributional advantage by stealth. Senior corporation members were often the wealthiest members of their communities, so the use of monetary fines to regulate access allowed them to consolidate their financial advantages without risking the unpopularity created by special formal privileges. In Sudbury, all ten aldermen used the commons between 1710 and 1728, and 34 out of 36 Chief Burgesses did so, compared to perhaps 25 percent of eligible free burgesses. Senior corporation members in Sudbury were much more likely than ordinary freemen to pasture horses or mares (for riding) than cows.[51]

The most overt, albeit atypical, example was in Berwick-upon-Tweed, where rights to the town's extensive lands were converted to monetary payments in the mid-eighteenth century. These were divided into three parts.[52] One-third was translated into shares reserved for senior burgesses or their widows; another third was granted to ordinary burgesses or their widows; the final third was reserved for corporation income. In the tiny borough of East Retford, Nottingham, it appears that the twelve aldermen and junior bailiff had appropriated a close of 20 acres in the eighteenth century, on which they no longer paid rent to the borough.[53] In sixteenth-century Oxford, the mayor was allowed eight animals on Port Meadow, aldermen six, and freemen two. However, soon after 1600 pressure of numbers caused every freeman to be limited to one animal.[54] Elsewhere, the main difference in rights was through rules that linked access to seniority. In Chippenham and Lancaster, the longest-serving freemen were given first access to the hay crop and the town marsh respectively.[55]

Subversions of governance

These neat definitions of entitlement often broke down in practice. Again, as Ogilvie has noted, we should expect such subversions in economic institutions where limits on access affected the distribution of resources and the efficiency of their use. Restrictions on access created "incentives for the excluded to violate institutional rules by moving to the informal

50 House of Commons Papers 465 (1840), ix–x.
51 French, Urban agriculture, 191.
52 House of Commons Papers 465 (1840), viii–ix.
53 First report municipal corporations, appendix 1, part 3, 1864.
54 Victoria County History of Oxfordshire, vol. IV: The City of Oxford, ed. Alan Crossley, Oxford 1979, 280.
55 First report municipal corporations, appendix 1, part 2, 1248; House of Commons Papers 465 (1840), 169.

sector".[56] Since a majority of freemen in most large towns were not engaged in agrarian activities, and some were too poor to own cattle or horses, many (perhaps a majority) did not exercise their rights. At the same time, there were many other people who wished to use the commons, but who lacked formal rights to do so. The most obvious group were non-resident dealers, butchers, and graziers, who wished to drive horses or cattle to market and might need to accommodate them nearby if they failed to sell. The solution was for entitled freemen to subcontract their rights to such unqualified potential users, even if this contravened the laws relating to manorial commons. Subcontracting of rights is mentioned in a number of towns in the sixteenth and seventeenth centuries, notably Worcester, Nottingham, Arundel, Tewkesbury, and Calne.[57] It was allowed in Doncaster and Chippenham, but forbidden in Coventry.[58] By the nineteenth century, Cambridge, Coventry, Leicester, and Gloucester allowed cattle-dealers and butchers to have special access to the commons, on payment of a fee.[59] Obviously, subcontracting weakened the connection between the formal stakeholders in the resource and the actual users, and altered patterns of use. Management remained in the hands of bodies that were, nominally at least, answerable to all freemen or ratepayers. However, given that a majority of freemen had no animals, and so no immediate interest in the quality of grazing or access to the commons, the lines of accountability and responsibility were obviously stretched severely by these changes.

The patterns of subcontracting could become very complex. In Clitheroe, Lancashire, very unusual patterns of subletting emerged by the mid-eighteenth century. Access to the commons was controlled by a complex mix of formal grazing rights, which were divided between fixed rights attached to 76 "ancient burgage" properties, and a further 49 holdings where rights were apportioned according to the land area connected to the house plot. On average, between 1764 and 1779, only 74 persons exercised these rights per year, out of a community of just over 1,000 inhabitants. Grazing a cow cost 12 shillings per annum, while grazing a horse cost 8 shillings, when a contemporary land surveyor estimated the market value of such grazing rights at three times these amounts.[60]

Clitheroe was a market town, situated in the pastoral economy on the edge of the Pennine hills. It specialised in the sale of horses, cattle, and sheep, often to dealers, graziers, and butchers. These people needed short-term access to the town's 335 acres of common land, but could not get it officially, because such rights were tied to property tenancies. They could have gained rights by renting house properties to which such entitlements were attached, but this would have been expensive if they only wanted the grazing rights.

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56 Ogilvie, "Whatever is, is right"?, 671.

57 Alan D. Dyer, The city of Worcester in the sixteenth century, Leicester 1973, 17; Jonathan D. Chambers, Population change in Nottingham 1700–1800, in: Leslie S. Pressnell (ed.), Studies in the Industrial Revolution, London 1960, 97–124, 101–102; VCH Sussex, vol. 5, part 1, 58; VCH Gloucestershire, vol. 8, 138; Victoria County History of Wiltshire, vol. 17, ed. D. A. Crowley, London 2002, 80.

58 First report municipal corporations, appendix 1, part 3, 1500 (Doncaster); part 2, 1248 (Chippenham); Victoria County History of Warwickshire, vol. 8, ed. W. B. Stephens, Oxford 1969, 199.

59 First report municipal corporations, appendix 1, part 4, 2190; VCH Warwickshire, vol. 8, 199; House of Commons Papers 583 (1844), "Select Committee on Commons Inclosure. Report. Minutes of Evidence", 296; House of Commons Papers 448 (1870), 13.

60 French, Urban common rights, 43–48.

The solution appears to have been an apparently counterintuitive unofficial system, in which most of the people who had rights transferred them to others, but then leased additional rights from other commoners to supply their own needs! So, the nail-maker Clement Proctor used the commons between 1764 and 1777 by exchanging the rights from the three properties to which he was tenant, for the rights of five other properties. He exchanged 14 full entitlements from the properties for which he was the tenant, for one full entitlement and nine half-entitlements from these five other properties.[61] Why did he do this, when he could have supplied all his own needs from the properties that he leased directly? Trading in this way created the necessary liquidity to operate a market in common rights which was much more flexible, and potentially more profitable, than the allocations fixed to properties. Presumably, these trades allowed tenants like Proctor to access not only the commons, but also some of that additional market value noted by contemporaries.

In some respects, the commons users of Clitheroe vindicated Ostrom's principles. They had formulated an effective self-sustaining management regime, in which rights were limited (there could not be more rights than there were half-shares in entitled properties), but could be reallocated effectively to meet users' actual needs as these varied from year to year. The problem was that this revised allocation system subverted the official management structure of the CPR, which was tied to the formal, legal system of property (burgage) entitlements. The council recorded these trades in resources in an additional column in the commons' management book, but it must have complicated the process by which any sanctions were applied. The disadvantage of this method was, as Ogilvie has suggested, that it imposed greater transactional costs on all concerned.[62] It also complicated mechanisms of accountability. Who was to be punished, the subcontractor of the right, or the tenant from whom he had leased these rights? How far were non-resident lessees likely to care about local accountability in the management of this resource? These concerns may explain why, a century before abolition of the town's commons, larger landowners complained that "those that have the greatest right get the least shares; and those that have the least right or none at all get the Most".[63]

Changes over time

The main changes over time in urban commons fell into two broad categories: the first can be termed "operational" – they affected the ways that commons were controlled or accessed, but they did not challenge their legal existence; the second can be described as "existential" changes, because they eventually undermined the legal form and operational functioning of urban commons.

61 Ibid., 57–58.

62 Ogilvie, "Whatever is, is right"?, 670.

63 Buckinghamshire Records Office Curzon Estate Archive Ax 94/80/1350, "Reasons why it is desired that the out-pastures belonging to Clitheroe should be inclosed" (n.d.).

Operational changes

The City of York illustrates a series of operational responses to developments in the patterns of use, and in the wider agrarian economy in which the common lands existed, some of which also occurred elsewhere. The large size of the city, and its relatively small commons of 559 acres (compared to rival centres such as Nottingham, Leicester, Coventry, or Lincoln), meant that even in the fifteenth century there were stints and charges to restrict the numbers of animals that each freeman could pasture.[64] The city possessed three types of common rights:

- Commons owned by the corporation and freemen at Knavesmire (the modern York racecourse) and Hob Moor nearby – both were low-value, poorly drained, rough grazing lands.
- Rights to better-quality pasture commons outside the borough boundaries, which York freemen shared with tenants of the neighbouring manors of Clifton, Huntington, Rawcliffe, Wigginton, Stockton Moors, and Tilmire.
- Seasonal grazing rights over fallows in arable fields owned by tenants in neighbouring manors.[65]

As in many other towns, the main causes of friction were the rights shared with others.[66] Before the Reformation, these disputes had included a long legal battle between the freemen and the Vicars Choral of the Cathedral, and with Sir James Danby, over pasture rights to land within the immediate vicinity of the city walls.[67] In both cases, the owners of these lands sought to exclude freemen from grazing their cattle on them, illustrating the jurisdictional contests that could occur when commons users did not have exclusive rights of access or a monopoly on the management of these resources.

Such Lammas grazing rights were a perennial source of dispute with neighbouring manors, and these happened frequently in other towns. Hertford had attempted to reserve grazing rights to freemen as early as the fourteenth century, while in the sixteenth and seventeenth centuries there were disputes or records of agreements over herbage rights in neighbouring parishes in Calne, Wilton, Oxford, Tewkesbury, Worcester, Coventry, Hertford, Leicester, Stafford, Burton-on-Trent, Leek, Chesterfield, and Gateshead.[68] In York, disputes over sea-

64 The city possessed seasonal access to c. 2,000 acres; Nottingham's town lands amounted to 1,100 acres; Leicester's were 2,600 acres, Lincoln's 2,000 acres. House of Commons Papers 85 (1874), 6; Victoria County History of Yorkshire: The City of York, ed. P. M. Tillott, Oxford 1961, 498. Coventry's were 1,400 acres on enclosure in 1860. VCH Warwickshire, vol. 8, 199.

65 VCH Yorkshire: The City of York, 499.

66 See H. Stocks/W. H. Stevenson (eds.), Records of the Borough of Leicester, 1603–1688, Cambridge 1923, 275, "Petition of Poore Freemen" 1633 (?); Victoria County History of Staffordshire, vol. 9, ed. Nigel J. Tringham, London 2001, 55.

67 Angelo Raine (ed.), York Civic Records, vol. 1 (Yorkshire Archaeological Society Record Series, vol. 98/1938), York 1939, 109–111.

68 VCH Hertfordshire, vol. 3, 498; VCH Wiltshire, vol. 17, 80; Victoria County History of Wiltshire, vol. 6, ed. E. Crittall, Oxford 1962, 19; VCH Oxfordshire, vol. 4, 281; VCH Gloucestershire, vol. 8, 138; Dyer, Worcester, 135; Charles Phythian-Adams, Desolation of a city. Coventry and the urban crisis of the late Middle Ages, Cambridge 1979, 182–183; Victoria County History of Leicestershire, vol. 4, ed. R. A. McKinley, London 1958, 99–100; VCH Staffordshire, vol. 9, 55; Victoria County History of Staffordshire, vol. 7, ed. M. W. Greenslade, Oxford 1996, 100; Philip Riden, History of Chesterfield, vol. 2, part 1: Tudor and Stuart Chesterfield, Chesterfield 1984, 29–30; Robert Surtees, The history and antiquities of the County Palatine of Durham, vol. 2, London 1820, reprinted Wakefield 1972, 106.

sonal rights and boundaries recurred through the centuries, being recorded in the 1490s, 1530s, 1540s, 1650s, and around 1700.[69]

These contests were amplified by gradual changes in usage of the land held by individual owners, and by the corporation's pressing need to improve its income. The former reflected the long-term process of piecemeal enclosure of open-field lands that happened everywhere in England from the fourteenth century onwards. This made it more difficult for town-dwellers to exercise seasonal herbage rights over lands outside the urban jurisdiction. In York from at least the mid-1650s, Campleshon fields, which adjoined the common at Knavesmire, had been enclosed and farmed as separate, fenced fields by their individual owners.[70] However, these were opened at Michaelmas to accept the freemen's cattle, requiring gates to be taken down and gaps made in hedges to allow access across these enclosed holdings.[71] The same awkward juxtaposition of cultivation "in severalty" and "burgensic usage in common" (to paraphrase Maitland) also occurred in Coventry, Lichfield, Derby, Nottingham, and Leicester.[72] Once again, the separation of the use-right to common pasture from legal title to the property on which it was exercised weakened the control over the resource, its boundaries, and its management that Ostrom describes as an important aspect of the self-regulation of such CPRs. The seasonal conversion of individual enclosures into a shared common pasture was a nuisance to the landowners, which reduced their compliance, and became an organisational impediment to herdsmen and borough officers.

The York Corporation also attempted to remedy problems with civic finances by enclosing common land to gain a higher return by leasing it at market rents to individual cultivators. It provoked riots when it put forward such a plan to enclose Knavesmire in 1536.[73] Similar attempts generated more serious disturbances at Coventry in 1525 and in 1608–9.[74] Partial enclosures were contemplated or enacted by a number of other boroughs in this period, including Grimsby in the 1590s, Colchester in 1628, Chippenham in 1608, Warwick in 1615, Leicester in 1624, the full enclosure of Liverpool's commons in the 1650s, and piecemeal enclosure at Lichfield around 1700.[75] In York, enclosure of neighbouring parishes led to herbage rights being extinguished in Fulford in 1756 and Clifton (north of the city) in 1762, with remaining herbage rights in neighbouring parishes being extinguished in a series of Enclosure Acts between 1817 and 1824.[76] Enclosure efforts in the sixteenth and seventeenth

69 Raine (ed.), York Civic Records, vol. 1, 110–111; Angelo Raine (ed.), York Civic Records, vol. 4 (Yorkshire Archaeological Society Record Series, vol. 108/1943), York 1945, 1–2; National Archives (NA) E.134/12 William III/East. 18, Mayor and Commonalty of York v. Robert Squire and the Archbishop of York, 29 Apr. 1700.

70 NA E. 134/12 William III/East. 18, Deposition of Jane Syers, Bishopthorpe, York.

71 Ibid., Deposition of Robert Jibb, York, Baker.

72 Phythian-Adams, Desolation, 179; VCH Staffordshire, vol. 14, 110; House of Commons Papers 465 (1840), 146; John Blackner, The History of Nottingham, embracing its antiquities, trade and manufactures, from the earliest authentic records, to the present period, Nottingham 1815, 29–30; Stocks/Stevenson, Borough of Leicester, 542.

73 Raine, York Civic Records, vol. 4, 1–2.

74 Phythian-Adams, Desolation, 254–255; Hirst, Representative of the people, 51–52.

75 NA E.134/43 & 44 Eliz. I/Mich. 12, William Barnard, Christopher Corker, Thomas Atkinson and Thomas Davis v. Bernard Cotton, Anthony Wilson and others, 19 Oct. 1601; Victoria County History of Essex, vol. 9, ed. J. Cooper, Oxford 1994, 258; Hirst, Representative of the people, 206–207, 211; Stocks/Stevenson, Borough of Leicester, 214; Michael Power (ed.), Liverpool Town Books 1649–1671 (The record society of Lancashire and Cheshire, vol. 136), Dorchester 1999, 499, 518, 603; VCH Staffordshire, vol. 14, 110.

76 VCH Yorkshire: The City of York, 503.

centuries often lacked the elaborate justifications found in eighteenth- and nineteenth-century Parliamentary enclosures. Sometimes, as in York, Coventry, Colchester, Nottingham, or Huntingdon, they were undisguised property grabs by the aldermanic elite, desperate to shore up civic finances at a time of trade decline.[77] In other cases, rights were only extinguished in some locations, sometimes to facilitate urban building or in-filling.[78] The former generated greater opposition and showed that in some larger boroughs, the freemen remained sufficiently interested in these rights to defend them vigorously by legal and extra-legal action.

Partial enclosures also produced another change that had a greater long-term effect on common rights. This was the trend to lease out common pastures to tenant farmers and convert the use-rights into cash payments that could be distributed among poorer freemen and their widows. While this preserved corporate ownership of the common land and continued to benefit freemen financially, it marked the effective end of direct use-rights by corporation members. For contemporaries, the logic was simple. As the eighteenth-century historian of Colchester, Philip Morant, observed in 1768:

> "This Privilege, as it hath been long managed, is a great hurt to many, and of advantage to very few. For it hinders the farmer from making such due improvements as he might. And it only authorizes some of the worst sort in general to keep beasts, for the sake of a few weeks feed; and to starve them, or to trespass upon their neighbours, the rest of the year […]. It is also of benefit to a very few, namely those who keep cattle; which is hardly one free-burgess in twenty […]."[79]

Consequently, he advocated that the commons be leased out, which would allow the free burgesses to retain ownership, but "which would raise a very considerable yearly sum, that might be distributed among the meaner sort of Free-Burgesses, or else be applied for the better maintenance of the Poor". Such conversions were often also the outcome of formal enclosures of these commons, in which areas of common lands were allotted to freemen, but then placed in the hands of trustees who would lease them out and use the money to provide pensions for poorer freemen. This occurred in Bath early in the eighteenth century, in Stafford in 1705, Rye in 1730, Berwick-upon-Tweed in 1761, in Newcastle-upon-Tyne under the controversial and partial enclosure of 1774, Launceston in 1784, Congleton in 1795, Lancaster in 1796, Tewkesbury in 1809, and Calne in 1813.[80] Such schemes were not always successful. In Hertford in 1757, 53 inhabitants took action against a trust that had been established to lease out the common lands to benefit the poor, because these resources were being managed so poorly.[81] At the same time, the corporate debt of many boroughs increased rapidly, driven

77 David M. Palliser, Tudor York, Oxford 1979, 84; Phythian-Adams, Desolation, 254–255; VCH Essex, vol. 9, 258–259; Chambers, Population change, 99; NA HO44/18 ff. 599–606, The Mayor, Aldermen and Burgesses of Huntingdon v. Garner, 1829.

78 E.g. Newcastle 1769, Sweet, English town, 135–136.

79 Philip Morant, The history and antiquities of the county of Essex, London 1768, 94–95.

80 First report municipal corporations, appendix 1, part 3, 2028 (Stafford); part 2, 1036 (Rye); part 3, 1444 (Berwick-upon-Tweed); part 2, 1120 (Bath); Sweet, English town, 144; First report municipal corporations, appendix 1, part 1, 520 (Launceston); part 4, 2652, 2657 (Congleton); part 3, 1610 (Lancaster); House of Commons Papers 465 (1840), vii; VCH Wiltshire, vol. 17, 80.

81 VCH Hertfordshire, vol. 3, 498.

by the increasing costs of providing improved roads, pavements, wider bridges, and poor relief, and this drove many councils to consider enclosing and selling their commons. For example, by 1835 the funds paid to freemen and their widows out of the corporation lands in Berwick-upon-Tweed were £8,695 in arrears. Southwold Corporation was £8,000 to 9,000 in debt and planned to sell the commons.[82]

Such changes created a difficult political challenge to commons users. Morant's estimate that these comprised only about 5 percent of the freemen appears accurate in many such towns. Within the urban political arena it was difficult for such commons users to argue for the preservation of their rights, when the alternative was to lease the land and spend the money to benefit two much larger groups – the indigent poor, or poorer freemen who did not own cattle. The defence of direct commons usage appeared to advantage only a special interest group, which could provoke the opposition of a wider body of rate-paying householders. With the decline in urban guild membership and formal apprenticeship in English towns in the eighteenth century, such ratepayers were increasingly unlikely to be formally qualified freemen, and so had little direct interest in preserving rights of common.[83]

Existential changes

Such disputes anticipated or accompanied formal enclosures by Parliamentary legislation that predominated in rural England in the century after 1750. By 1914, 161 urban commons had been wholly or partially enclosed under Parliamentary legislation, distributed across every English county.[84] Much of this activity was generated by the same forces that drove enclosure in the countryside, particularly the expectation of increased rental profits. William Marshall observed in 1804 that:

> "If the common fields or meadows are what is termed Lammas land, and becomes common as soon as the crops are off, the depression of value may be set down at one half of what they would be worth, in well-fenced inclosures, and unencumbered with that ancient custom."[85]

Parliamentary enclosure required not only enabling legislation, but also the agreement of two-thirds of those whose rights were to be reconfigured. The process was relatively simple where these were a small number of private landowners, as in most rural enclosures. Similarly, in small boroughs enclosure was undertaken swiftly where a narrow oligarchy ran the corporation, or where the associated landlords were few and wealthy, as in Clitheroe.[86] In a

82 House of Commons Papers 465 (1840), ix.

83 On the complexities of this, see Giorgio Riello, The shaping of a family trade: the Cordwainers' Company in eighteenth-century London, in: Ian A. Gadd/Patrick Wallis (eds.), Guilds, society and economy in London, 1450–1800, London 2002, 141–159.

84 Derived from House of Commons Papers 399 (1914), Return "in chronological order of all acts passed for the inclosure of commons or waste lands, separately, in England and Wales…".

85 William Marshall, On the landed property of England, London 1804, 13–14.

86 French, Urban common rights, 59–62.

few places, such as Bodmin in Cornwall, the commons appear to have been enclosed by a single landowner, who was able to disregard opposition from the town and its inhabitants.[87]

Extensive common rights survived longest where the body of free burgesses with rights was largest. As we saw, this was in the largest shire-boroughs of the Midlands and the North – Newcastle-upon-Tyne, Preston, York, Beverley, Coventry, Nottingham, and Oxford. Each had 1,000 to 3,000 freemen by the 1830s, and it was very difficult to gain approval for enclosure among such large and diverse electorates – particularly as long as the rights to vote in civic and Parliamentary elections were tied to the same rights of freedom that allowed access to the common lands.[88] There were attempts to enclose in Newcastle and Oxford in the 1760s, Coventry in the 1780s, and various proposals in Nottingham after the enclosure of nearby Leicester in 1803.[89] All were resisted because the freemen could be mobilised to oppose them and were too large a group to be bribed or forced into change.

By 1835, Nottingham was the most notorious example of a large borough where change was needed but could not be obtained. The town was very overcrowded because it was unable to expand into the surrounding open fields and common lands, about which no agreement could be reached. In particular, East and West Crofts between the town and the River Trent were used as common meadows, and commoners were reluctant to give them up, despite witnesses to various Parliamentary enquiries stressing that only about a quarter of freemen used their rights, while many more paid for individual garden allotments on the other side of the river. As T. Hawksley reported to a Parliamentary enquiry in 1842:

> "[…] being a very numerous body, and many of that body being of a very low class of society, they are enabled to resort to acts of violence which could not be resorted to by an incorporated body […] they do levy, for what they please to call encroachments upon the commons […] a sort of blackmail […] if any refusal take place by the parties upon whom the claim is made, they make no hesitation of entering with an axe and chopping all down before them."[90]

The fate of the commons in these large boroughs reflects the fact that these were "political" as well as "economic" entities. Arguably, despite the fact that these lands were used by a minority of freemen and had only marginal economic impact, they could be enclosed only after the 1832 Reform Act had separated the Parliamentary franchise from rights of civic freedom, and thus from access to commons, and the 1835 Municipal Reform Act did the same thing in civic government. Once the wider body of ratepayers was given a vote in deciding the fate of common lands, in which they had no immediate interest as commoners, the chances of the survival of the commons as agrarian spaces were slim. Demographic expansion also marginalised the freemen. In Nottingham in the 1790s, freemen had amounted to 2,524 persons out of a total population of c. 14,000 (or 18 percent), which ensured that many households

87 First report municipal corporations, appendix 1, part 1, 447.

88 See note 15 above. House of Commons Papers 141 (1831–32), "Reports from Commissioners on proposed Division of Counties and Boundaries of Boroughs in England and Wales: Parts I–VIII". The highest number of voters polled in Beverley was 1,420 in 1830, in Coventry 2,763, in Oxford 1,779; ibid., 178, 84, 193.

89 Sweet, English town, 144; VCH Oxfordshire, vol. 4, 280; Chambers, Population change, 99; John Prest, Industrial Revolution in Coventry, Oxford 1960, 21, 28–29; House of Commons Papers 583 (1844), 296.

90 House of Commons Papers 583 (1844), 226.

still contained a freeman. By 1844, they comprised only 4.7 percent (2,500 out of an estimated total population of 53,000) and can only have represented a minority of the borough's households.[91] As the inquiry into municipal corporations observed in 1835:

> "The most common and striking defect in the constitution of the Municipal Corporations of England and Wales is, that the corporate bodies exist independently of the communities among which they are found. […] they have powers and privileges within the towns and cities from which they are named, but in most places all identity of interest between the Corporation and the inhabitants has disappeared."[92]

Rapid urbanisation in England after 1760 broke open a fault-line that had long existed in relation to town commons. In most small to medium-sized towns, commons users were a small minority of the total urban population whose common rights were simply another feature of the unequal, oligarchic distribution of power on which civic authority was based. Sometimes, as in Clitheroe, subletting arrangements may have opened the common lands to a proportion of those who were denied formal access rights. However, in the large Midland boroughs, although freemen were a numerical minority of urban dwellers for much of our period, they may well have represented a majority of resident households in the town. In these larger corporate boroughs, common rights survived as long as they were bound together with rights of civic freedom and the Parliamentary franchise. These governance systems could survive changes in agrarian land use and even rapid urban population expansion, but they could not endure the emergence of liberal political ideas. Faced with a political philosophy that regarded all "citizens" as equal under the law, it was difficult to justify or explain why some urban dwellers with rights of civic freedom should have use and access rights to common lands that were denied to their "unfree" neighbours.[93] Political liberals and Benthamite reformers sought to redirect these assets to achieve a wider public benefit, either by selling them and using the money for public purposes (including repaying civic debts), or by transforming these lands into areas of much-needed leisure and recreation, sometimes cut-down and reshaped (as in Newcastle, Preston, and York), and reserved for the use of "respectable" middle-class urban inhabitants.[94]

Conclusion

In some respects, English urban common lands conform strongly to Ostrom's model. They survived for centuries because they were generally well-defined in law, in terms of their spatial

91 Prest, Coventry, 28; House of Commons Papers 583 (1844), 226.

92 First report municipal corporations, vol. 3, 32.

93 This did not always prevent political corruption linked to access to common lands, notably in Beverley in the late 1850s and early 1860s. House of Commons Papers 90 (1868–69), "Beverley election. Index to the minutes of the evidence taken at the trial of the Beverley election petition", iv–v.

94 See Douglas A. Reid, Playing and praying, in: Martin Daunton (ed.), Cambridge urban history of Britain, vol. 3: 1840–1950, Cambridge 2001, 745–808, 762–765; Bowden et. al., Archaeology, 56–60; Richard W. Hoyle, The enclosure of Preston Moor and the creation of Moor Park in Preston, in: Northern History 49/2 (2012), 281–302; VCH Yorkshire: The City of York, 505–506.

extent and their use or access rights. Their management was integrated within forms of civic governance that were based on written charters in most (but not all) boroughs. Operational management was devolved to elected or appointed civic officers ("pasture-masters"), and usually governed according to bylaws that were known to most commons users, if not always well-preserved in surviving sources. Consequently, commons' boundaries, rights, and access could be defended relatively easily in law, and usage could be apportioned and controlled by governing bodies that were fairly efficient, and drawn from a wider body of freemen or ratepayers.

However, in two other fundamental respects the history of urban common lands in the larger English boroughs complicates Ostrom's concept of a self-regulating mechanism for economically efficient CPRs. Firstly, to a greater extent even than De Keyzer's rural examples, systems of commons management were always entangled within other aspects of civic government and urban politics. Freemen, who were commons users in one context, were urban electors, defenders of corporate monopolies, or rent-seekers in other contexts. The governance and the very survival of urban commons could be influenced by each of these additional imperatives. As we have seen in Nottingham or York, common lands might persist when they no longer enjoyed the support of a majority of potential users, because access rights were tied to political factions and the governmental status quo. Similarly, in York the corporation continued to defend and project freemen's seasonal Lammas use-rights over land in neighbouring jurisdictions even when this had been enclosed by its owners, in order to assert its own corporate privileges. These practices helped perpetuate the existence of commons and commons users, but for reasons that were often related only indirectly to the immediate management of these CPRs. As Ogilvie has observed, "these ways may not necessarily be efficient, but they are often self-sustaining".[95]

Secondly, as has been emphasised, access to common lands was an integral part of the unequal and hierarchical distribution of power and resources within English towns. The "institutions" through which urban commons were managed support De Keyzer's conclusion that such bodies "were fundamentally shaped by the society in which they were created, instead of the other way around".[96] Commons access was limited by socially restrictive rights of freedom or by property qualifications, and so excluded significant numbers of residents who lacked real property from such resources. Certainly, a minority of "poor freemen" were able to pasture their animals, or (increasingly) derive a financial benefit from the rent-charges on others who did so. However, the institution of urban common lands did not redress this problem of resource entitlement any more effectively or completely than the institution of the urban alms-house addressed the problem of urban poverty. Instead, it highlighted three ironies. Firstly, the defence of common rights involved the assertion of a minority privilege, even if this was often expressed in terms of a collective, or universal, civic right. Secondly, these common resources were challenged by reforms designed to expand or, at least, to rationalise the Parliamentary and corporate electorates in the 1830s. When civic politics actually began to take account of the interests of a majority of middle-class ratepayers, the access privileges of borough freemen were swiftly abolished. Thirdly, Ostrom's self-sustaining collective CPR

95 Ogilvie, "Whatever is, is right"?, 674.

96 De Keyzer, Distributions of power, 537.

was thus abolished, in this instance, partly because of the application of new liberal ideological concepts that advocated the supremacy of the individual political and economic agent.

It is very important to understand why CPRs, such as land vested in collective ownership with shared-use rights, can be self-sustaining over the *longue durée*. Ostrom's model provides an explanatory framework for us to understand both contemporary and historic examples of the ways in which users can create "bottom-up" systems of management that resist over-exploitation and unrestrained individualism. As a model, it simplifies and abstracts, and separates out the CPR and its users from the other spheres in which it, and they, might also exist. As Ogilvie and De Keyzer have indicated, the difficulty with this in a historical context is that the existence of this resource might be perpetuated as much by the influence of these external factors as by the co-operation of the resource-users themselves. The survival of this resource clearly required the maintenance of an internal equilibrium of interests among its users. However, the example of England's urban commons indicates strongly that the maintenance or disruption of this equilibrium also depended on "distributional" political bargains with external institutions and agents, to secure their protection, deflect their challenges, or simply cause them to look the other way. The history of these common lands illustrates very clearly that the efficiency or effectiveness of the management of the common lands is not alone sufficient to explain their ultimate survival or extinction.

Piotr Miodunka

The *Longue Durée* in Polish Towns: Agriculture from the Sixteenth to the Nineteenth Century

Abstract: The paper deals with the ruralisation of small Polish towns in the long-term perspective. This is a particularly important trend because the urban network in Poland was, with the exception of a few cities, dominated by small towns. The present state of research suggests that for more than 50 percent of the inhabitants of these towns, agriculture was a primary source of income. This issue is reconsidered here using the example of small towns in southern Poland (in the period 1772–1918, the western part of Austrian Galicia). The following questions are addressed in detail: area and structure of agricultural land, size distribution of urban farms, general economic conditions for urban agriculture, types of farming, self-sufficiency in grain production, and strategies of urban farmers. These are examined above all on the basis of primary sources: the first Austrian land cadastre of 1785 (the Josephine Cadastre) and population censuses from the eighteenth to the twentieth century. The results of this research suggest that involvement in agriculture among town-dwellers was on the whole relatively stable until the mid-nineteenth century, but varied considerably from individual to individual depending on a range of factors (e.g. material status). They also indicate that agriculture had more of a supplementary than a primary role in urban families' income structure.

Key Words: urban farming, small towns, Poland, early modern, nineteenth century

Introduction

The urban network in Poland was – with the exception of a few cities – dominated by small towns, most of which have traditionally been considered as semi-rural settlements.[1] This opinion became widespread from the end of the eighteenth century, above all among the civil servants of the partitioning powers and the more enlightened among Polish economists.[2] It is also worth quoting a few contemporary opinions of owners or holders of royal estates on

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1 Maria Bogucka, The network and functions of small towns in Poland in early modern times (from the 16th to the first half of the 17th century), in: Antoni Mączak/Christopher Smout (eds.), Gründung und Bedeutung kleinerer Städte im nördlichen Europa der frühen Neuzeit, Wiesbaden 1991, 219–233, 225; Andrzej Janeczek, Town and country in the Polish Commonwealth, 1350–1650, in: Stephan R. Epstein (ed.), Town and country in Europe, 1300–1800, Cambridge 2001, 156–175, 171.

2 Stanisław Staszic, O statystyce Polski. Krótki rzut wiadomości potrzebnych tym, którzy ten kray chcą oswobodzić i tym, którzy w nim chcą rządzić, Warszawa 1807, 19; Wacław Tokarz, Galicya w początkach ery józefińskiej w świetle ankiety urzędowej z roku 1783, Kraków 1909, 333, 338, 339.

the incomes of townspeople: "Some citizens of this town are engaged in craft and agriculture, others in agriculture and selling alcohol, but almost none in trade" (Myślenice, a town in the castellany of Kraków), "Citizens […] produce and sell alcohol, they conduct trade and craft, but above all they live off the land" (Pilzno, a royal town), "Shoemakers […] work [in their craft] until the summer and during the summer they are employed on the land; weavers […] work [in their craft] no longer than four months [in the year]; they live primarily off the land" (Przecław, a noble town).[3] All these present bleak views of the townspeople's non-agricultural occupations, but the question is whether they did not have an interest in expressing such judgements.

However, the role of agriculture in Polish towns has tended to be ignored by historians, whose knowledge of the issue remains largely superficial, and whose area of research extends no further than the paradigm of the ruralisation of small urban centres.[4] The accuracy of this view, which is still widespread, is questionable. On closer investigation of individual towns, while it is hard to ignore the significance of agricultural activity – the more so given that most extant local source materials from before the mid-nineteenth century concern trade in real property, including gardens and arable land –, it nonetheless becomes clear that craft and trade were in fact practised much more extensively by town-dwellers than was previously assumed.[5] It was also typical of the less populous peripheries of Europe that, owing to the small number of middle-ranked and larger cities, small towns played a more important economic role in such regions than did similar towns in the core region.[6] Notwithstanding other urban activity, agriculture was an important part of the economy of urban households, and probably more stable than crafts and trade, which were sensitive to changing regional and even global economic conditions.

The paper will deal with urban agriculture in southern Poland (located until 1772 in the Polish-Lithuanian Commonwealth, and in the period 1772–1918 part of the Austrian Monarchy) in the long-term perspective, with a particular focus on the eighteenth and nineteenth centuries, taking into consideration an area encompassing 65 historical towns with city or town charters.[7] Of these, 48 were established during the Middle Ages and 17 in the Early Modern era. At the turn of the eighteenth and nineteenth centuries, only five (Biała, Bochnia, Wieliczka, Nowy Sącz, and Tarnów) were significantly bigger and more developed than the average.[8] The rest we could call market towns, although their population varied from about 500 to 2,500 inhabitants.

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3 National Archive in Kraków, IT 2294, 169 (1777); Central State Historical Archive of Ukraine in Lviv, 146/18, unit 4227 (1789); National Archive in Kraków, Deposit manuscript 459 (1792). Author's translation.

4 Maria Bogucka/Henryk Samsonowicz, Dzieje miast i mieszczaństwa w Polsce przedrozbiorowej, Wrocław 1986, 108, 448–451; Ireneusz Ihnatowicz et al., Społeczeństwo polskie od X do XX wieku, Warszawa 1999, 368, 371.

5 Such findings appear in local historical monographs of towns for which such materials have been preserved – craft guild documentation, local tax rolls, etc.; see also: Piotr Miodunka, Demograficzny i gospodarczy potencjał małych miast południowej Polski od końca XVI do początku XIX wieku, in: Roczniki Dziejów Społecznych i Gospodarczych 78 (2017), 131–161, 151–157.

6 Sven Lilja, Small towns in the periphery: population and economy of small towns in Sweden and Finland during the early modern period, in: Peter Clark (ed.), Small towns in early modern Europe, Cambridge 1995, 50–76, 75; Vera Bacskai, Small towns in eastern central Europe, in: ibid., 77–89, 87–89.

7 Historically parts of the Kraków province (not including Kraków) and the Sandomierz province (not including Sandomierz).

8 The largest, Wieliczka, had a population of around 4,500, the other towns of approximately 3,000; three were the seats of local administration, and two were centres of salt mining.

Cities and towns in Poland were established according to a pattern which remained unchanged from the thirteenth until the eighteenth century. Beside the area given over to the urban infrastructure – a market square, streets, and the parish church – and individual building plots, allotments were also demarcated, as gardens for the owner of each house, within the city walls, perimeter fence, or ditch. One further fact of particular importance is that every town had agricultural land available to use for farming and grazing. In some cases, when a town was chartered on land occupied by a pre-existing village, or when a village was established on land granted to a town bailiff (Polish: *wójt*, the successor of the founding administrator of the town), the boundaries of the agricultural land belonging to each settlement were not immediately obvious. The citizens themselves knew exactly where the urban land was, but tax collectors would sometimes treat the town together with a nearby rural suburb or suburbs as a single entity for tax purposes. This problem was perpetuated by the Austrian officials who surveyed the land for the purposes of the first land cadastre: the Josephine Cadastre, 1785–1787. In some cases, they listed towns together with nearby villages as single cadastral entities; such cases are excluded from further analysis of urban agriculture in the present study.

Gardens, arable land, and meadows were owned by citizens on an individual basis, though sometimes in private noble towns some restrictions on sale applied. Pastureland belonged to the whole community, and sometimes there was also one unit of arable land (Polish: *rola*) which was administered by the municipal council. In the few larger cities there were larger swathes of land at the disposal of the community, along with buildings: farms called *folwarks*, or even whole villages. Urban arable land was owned exclusively by the Christian population. The Jews, who in the seventeenth and eighteenth centuries populated particularly the noble towns in great numbers, cultivated small homestead gardens at most. Thus, the notions of burgher farmers and Christian burghers are identical.

In summary, then, the paper will discuss questions regarding land used for agriculture that was under the jurisdiction of towns; the distribution of agricultural land of various types; and, for individual farms, volume of crop production, numbers of livestock kept, and other information crucial for determining the capabilities which farming offered to town-dwellers. Given the lack of relevant materials facilitating quantitative analyses of the economic role of craft, services, and trade, we will examine the importance of these areas by negative proof, that is, by demonstrating the probability that agriculture was not an occupation from which one could make a living or even be self-sufficient in feeding one's family.

Data

One fundamental problem experienced by those working on this subject is the scarcity of sources and studies facilitating broader comparison. Two categories of region-wide source materials dating from before 1800 show the overall area of arable land in towns: first, the state tax lists from the end of the sixteenth century; and second, cadastral surveys, the first of which was undertaken at the end of the eighteenth century. For the nineteenth century we have access to farming statistics, but in very few cases do these reference towns only. Many more detailed issues can only be studied for a sample of towns, using locally specific source materials.

Of the pre-1772 tax-related materials pertaining to land, only the late sixteenth-century registers mentioned above are considered relatively reliable. Information on arable land

(excluding gardens, meadows, and pastureland) in towns was supplied by the townspeople themselves – under oath, but not on the basis of any empirical measurements, so it is of very limited accuracy. In later periods the tax sums assessed at this time were used as the basis for calculating the amounts of tax levied, without new assessments to reflect changes in taxable units, but the land tax declined in overall importance relative to the poll tax. This only changed when the southern part of Lesser Poland was annexed by Austria; the process of submitting new tax declarations, in which once again arable land was the most important factor, began while Maria Theresa was still on the throne.

Her successor, Emperor Joseph II, initiated a fiscal reform, one of the most important elements of which was the first land cadastre, known as the Josephine Cadastre, or *metryka józefińska* in Polish, compiled for Galicia between 1785 and 1787. Surviving materials from this undertaking include cadastral land surveys (without maps), which supply information on the results of land measurements as well as estimations of yields, harvests, and gross value of grain produce.[9] All the profitable plots of land for each holder were inventoried and categorised as one of the following types of culture: arable land, garden, meadow, pasture, pond, permanently uncultivated land (not including fallow fields in the three- or two-field rotation system), or forest. Arable fields were also divided into classes by their fertility. For each class the volumes of seed sown and the yield-seed ratio were determined. Next, the three-year harvests of each plot were estimated using these factors. For arable fields only four crops were taken into account: wheat, rye, barley, and oats. Any other crops cultivated were amalgamated with the main ones according to price: peas and flax with wheat; proso millet, broad beans, and hemp with rye; and buckwheat with barley. The resulting divergence between the cadastral figures and the real area under cultivation was only 2 to 3 percent in the case of wheat and rye. For barley there is greater uncertainty because buckwheat was grown on at least 5 percent of arable land, but probably even more.[10] What is especially important is that harvests from gardens were recorded in the same way as those from meadows, that is, as hay harvests.

The accuracy of plot measurement is generally evaluated as satisfactory, whereas the question of the credibility of the estimates of the quantity of seeds obtained from one sown is more controversial.[11] Personally, I believe that the procedures by which this survey was conducted were advanced, involving the use of manorial accounts, testifying the very precise data on seed and yield, testimonies of peasants from nearby villages, and the supervision by district

9 The principles of this reform are discussed in detail by Roman Rozdolski, Die große Steuer- und Agrarreform Josefs II. Ein Kapitel zur österreichischen Wirtschaftsgeschichte, Warszawa 1961, 30–83. Key materials are stored in the Central State Historical Archive of Ukraine in Lviv, and summaries in Vienna, in the Finanz- und Hofkammerarchiv (AT-OeStA/FHKA NHK Kaale Steuer-Reg.HK Summ 80–84), they are partially published: Alicja Falniowska-Gradowska, Studia nad społeczeństwem województwa krakowskiego w XVIII wieku. Struktura własności ziemskiej i użytkowanie gruntów w świetle katastru józefińskiego, Warszawa 1982; Alicja Falniowska-Gradowska/Franciszek Leśniak, Struktura własności ziemskiej i użytkowania gruntów w Galicji w cyrkułach rzeszowskim, sanockim i tarnowskim w świetle katastru józefińskiego (1785–1787), Toruń 2009.

10 Jerzy Fierich, Kultury rolnicze, zmianowania i zbiory w katastrze józefińskim 1785/7, in: Roczniki Dziejów Społecznych i Gospodarczych 12 (1950), 25–67, 36–38.

11 Mateusz Troll/Krzysztof Ostafin, Use of late 18th and early 19th century cadastral data to estimate past forest cover change – a case study of Zawoja village, in: Prace Geograficzne 146 (2016), 31–49, 44 – precision of calculations in respect of the Zawoja forests; Falniowska-Gradowska/Leśniak, Struktura własności ziemskiej, 17–18.

commissions; and therefore the results may be accepted as plausible.[12] The yields which the cadastre shows are generally very low. In the western part of Galicia the yield-seed ratios of wheat varied from 2.2 to 4.2, those of rye from 2.5 to 4.1, of barley from 2.7 to 4.6, and of oats from 2 to 3.1, depending on geographical location. This corresponds with the results of other studies, which indicate a gradual decline in yields from the sixteenth century.[13]

General economic conditions for urban agriculture

Conditions for agriculture in towns were shaped by both the overall economic and political situation and by circumstances arising from the type of estate within which they were located: royal, clerical, or noble-owned. In the Polish-Lithuanian Commonwealth period before the partitions, until around 1600 royal cities played a major role, and their residents were active players in the lucrative trade in produce down the Vistula to Gdańsk. Thereafter, however, wealthy nobles began to found increasing numbers of small towns on their estates, whose primary role was to serve the local market. In the later seventeenth and the eighteenth century, the domination of the nobility not only over the grain trade with Gdańsk, but also over its processing into alcohol in their own breweries and distilleries, left little room for development of these occupations in the increasingly slow-growing towns. Nonetheless, the local market for trade in commodities was sufficiently lively that in the eighteenth century many villages were granted the right to hold markets without acquiring full municipal rights, though they increasingly began to resemble proper towns.[14] In considering the pre-1772 period, it is important to emphasise that the exemption of urban land from feudal duties imposed on the peasantry, above all the corvée, was a positive impulse for towns. However, all towns saw an overall deterioration in their economic condition as a result of competition from the landed gentry, which consequently amplified the importance of arable farming and animal husbandry to the townspeople.

After the annexation of the region by Austria in 1772, the role of the state increased, though ultimately smaller private towns remained at the mercy of their owners. Over an area approximately equal in size to that under study, of around 21,780 square kilometres (slightly larger than the historical parts of the former Kraków and Sandomierz provinces), there were 75 localities with historical municipal privileges functioning in this period, or one per just 290 square kilometres. The Austrian administration raised the status of many market villages to level with that of private towns. These policies also brought an increase in the concentration of Jews in towns, thereby raising the proportions of craftspeople and traders in their overall

12 Some of the descriptions of the quality of land have annotations by the supervisors regarding increases in estimated yields or other changes.

13 Andrzej Wyczański, Le niveau de la récolte des céréales en Pologne du XVI[e] au XVIII[e] siècle, in: Fernand Braudel et al. (eds.), Première conférence internationale d'histoire économique, Stockholm aout 1960, Paris 1960, 585–590, 588; Leonid Żytkowicz, The peasant's farm and the landlord's farm in Poland from the 16th to the middle of the 18th century, in: The Journal of European Economic History 1 (1972), 135–154, 146.

14 Józef Maroszek, Targowiska wiejskie w Koronie Polskiej w drugiej połowie XVII i w XVIII wieku, Białystok 1990.

populations.[15] Nonetheless, it would be fair to say that until the mid-nineteenth century the "old" towns continued to play their traditional role as centres of certain crafts, such as shoemaking, and trade – above all plied by Jews, but also the Christian trade in swine. After 1848, however, economic factors came to the fore; in that year holders of land in villages and towns became full proprietors, and feudal duties were abolished. In 1856 the eastbound railway line being built in the direction of Lwów (Lviv) from Kraków reached the little town of Dębica, bisecting this region along its latitudinal axis. Finally, in 1859 the monopoly of the guilds was abolished. On the one hand, then, the towns were now liberated from the constraints of their subordinate status, but on the other they had lost what little legal advantage they had enjoyed over the villages.

Prior to the partitions, the ownership of towns determined the extent of freedom to trade in agricultural land, and hence the possibilities for developments to farm structure. In royal towns this freedom was greater, while in towns owned by noble families, trade in land was at times subject to oversight, partly in order to curtail the emergence of a real property elite. On the other hand, freedom of trade in land often meant that it was easier for plots in towns – often the most attractive of them – to fall into the hands of the church as endowments. This was especially significant from the end of the sixteenth century, when, as the Counter-Reformation gathered pace, new benefices such as prebends or fraternities were founded and endowed alongside parish churches. Religious orders, both old and new, also benefited. Thus in 1785 in the small town of Skawina, around 70 percent of the arable land was owned by burghers (something over 120 in number), while 22 percent was the property of local church institutions.[16] This land may or may not have formed part of urban farms there, in the form of leaseholds.

Area and structure of agricultural land

The area of cultivated taxable land pertaining to particular towns on which we have information from a tax list dating from about 1580 varies widely. Of the 38 towns for which we have data, the smallest area was approximately 50 hectares and the largest 1,090 hectares, but the largest and the third largest (800 hectares) certainly also included the two rural suburbs of the towns in question. Thus, actual arable area ranged between 50 and perhaps 500 hectares.[17] Overall, this information does not appear credible at first glance; the respective areas seem too small compared to the results of the first cadastral survey of 1785–1787. Cadastral communities which were created for its purposes covered the whole urban area, but there was no unified rule concerning incorporation of rural suburbs into towns. In the case of the town of Biecz, only the urban area proper, with gardens and pastures totalling 7.14 hectares, was taken into account. In other cases, conversely, neighbouring villages were included with

15 Józef Buzek, Wpływ polityki żydowskiej rządu austriackiego w latach 1772 do 1788 na wzrost zaludnienia żydowskiego w Galicyi, in: Czasopismo Prawnicze i Ekonomiczne 4 (1903), 91–130.

16 Central State Historical Archive of Ukraine in Lviv, 19/8, unit 170.

17 Adolf Pawiński, Polska XVI wieku pod względem geograficzno-statystycznym, vol. III: Małopolska (Źródła Dziejowe, vol. XIV), Warszawa 1886. The area was given in units called *łany* (hides), which were probably not standardised. Nevertheless, a conversion value of 25 hectares is used, which represents the unit known as the *łan frankoński* (German: *fränkische Hufe*), commonly used in southern Poland.

the town, blurring the picture of their mutual agricultural relations. Such cases are excluded from further analysis (Table 1).[18] The cadastral communities created in the towns included land belonging to the burghers and to the town as a whole, to church institutions, and to feudal lords. Ownership of woodland by towns or burghers was very rare and virtually only occurred in royal or church towns. Municipal land, whether individual or communal, was thus used almost entirely for agricultural purposes.[19]

Table 1: Agricultural land in towns in Western Galicia in 1785

Total agricultural area	No. of towns
> 1000 ha	8
500–1000 ha	9
250–500 ha	24
100–250 ha	10
< 100 ha	6
Total for 57 towns: 29,144.2 ha	Mean average: 511.3; median: 354.8 ha

Sources: Alicja Falniowska-Gradowska, Studia nad społeczeństwem województwa krakowskiego w XVIII wieku. Struktura własności ziemskiej i użytkowanie gruntów w świetle katastru józefińskiego, Warszawa 1982; Alicja Falniowska-Gradowska/Franciszek Leśniak, Struktura własności ziemskiej i użytkowania gruntów w Galicji w cyrkułach rzeszowskim, sanockim i tarnowskim w świetle katastru józefińskiego (1785–1787), Toruń 2009.

One fundamental aspect of the agricultural profile of the towns which can be derived from the 1785 cadastral data is the ratio of farm land (arable land and gardens) to grassland (meadows and pasture). This is presented in Table 2.

Table 2: Basic forms of agriculture in towns in Western Galicia in 1785

Type of land cultivation	No. of towns
Farmland > 90%, grassland < 10%	13
Farmland 75–90%, grassland 10–25%	27
Farmland 50–75%, grassland 25–50%	12
Farmland < 50%, grassland > 50%	5

Source: see Table 1.

In most of the towns crop production was the dominant form of agriculture. There were just five in which grassland accounted for over 50 percent of the agricultural land, and each of

18 Only land in the possession of municipal institutions and individual citizens was taken into account. Land within the town's administrative borders but belonging to the landlord's demesne farms, and Church land, was excluded.

19 The townspeople of Nowy Targ and Piwniczna – both submontane royal towns – had exceptionally large swathes of forest (over 1,000 ha).

these had a total agricultural area of over 1,000 hectares. This means that arable fields also occupied a considerable area, further strengthening the observed dominance of crop farming. Three of these five towns were situated in mountainous areas, so that geographical conditions at least partially determined their specialisation. Conversely, the lowest share of grassland is mostly seen in the towns with the least land: eight of 13 towns with over 90 percent farmland were in the category with less than 250 hectares of agricultural land overall. Other than in the five towns mentioned above, grassland did not account for a significant area in either absolute or relative terms (Table 3).

Table 3: Descriptive statistics of grassland in towns in 1785

	ha	% of total agricultural land
Mean	147.5	21.7
Median	55.3	18.9
Standard deviation (SD)	237.5	15.5
SD excluding the 5 towns with >50% of grassland	113.0	10.0

Source: see Table 1.

Although data from different periods are not entirely comparable (for instance, later data also include agricultural land belonging to church institutions), they do show a clear trend (Tables 4 and 5). In the first half of the nineteenth century only the area of arable fields increased, which was partly due to the transformation of meadows and pastures. In the second half of that century increases may be observed in the areas of land devoted to all types of cultures, probably due to improvements in drainage techniques. These tables refer to different groups of towns as a result of the varying availability of data for each.

Table 4: Changes in agricultural land use in 54 towns, 1785–1850

	1785	1850	1785–1850	
	ha	ha	ha	%
Arable land	19,738	24,402	+ 4,664	+ 23.6
Meadows & gardens	3,625	3,269	- 356	- 9.8
Pastures	5,868	4,735	- 1,133	- 19.3
Total	29,229	32,406	+ 3,177	+ 10.9

Sources: see Table 1; Skorowidz wszystkich miejscowości położonych w Królestwie Galicyi i Lodomeryi wraz z Wielkiem Księstwem Krakowskiem, Lwów 1868.

Table 5: Changes in agricultural land use in 24 towns, 1785–1900

	1785	1850	1785–1850		1900	1850–1900		1785–1900	
	ha	ha	ha	%	ha	ha	%	ha	%
Arable land	9,093	11,295	+2,202	+24.2	12,323	+1,028	+9.1	+3,230	+35.5
Gardens	368	1,308	-464	-26.2	280	+197	+15.1	-88	-23.9
Meadows	1,404				1,225			-179	-12.7
Pastures	2,721	2,000	-721	-26.5	2,559	+559	+27.9	-162	-5.9
Total	13,586	14,603	+1,017	+7.5	16,387	+1,784	+12.2	+2,801	+20.6

Sources: see Table 1; Gemeindelexikon von Galizien, Wien 1907.

Size distribution of urban farms

The towns under study here varied considerably in regard to both the total land area used for agriculture and to the areas devoted to particular cultures such as arable land or meadows. The spread was much smaller when calculated in terms of average land per inhabitant or the average size of the urban farm (Table 6).[20]

Table 6: Agricultural land and urban farms in selected towns in 1785

Town	Total agricultural land of town (ha)	Arable fields and gardens of burghers (ha)	Number of owners	Average farm size (ha)
Brzostek	214.21	193.43	91	2.13
Kolbuszowa	302.20	242.08	107	2.26
Limanowa	-	81.89	62	1.32
Mielec	216.29	200.30	108	1.85
Pilzno	238.01	226.28	104	2.17
Przecław	157.57	135.45	86	1.57
Radomyśl	335.20	317.36	131	2.42
Rzochów	211.61	158.27	74	2.14
Skawina	560.87	528.15	127	4.16
Tymbark	-	236.33	59	4.01
Uście Solne	-	548*	267	2.05
Wojnicz	359.16	224.03	119	1.88
Zakliczyn	-	194.65	165	1.18

* including meadows

Sources: Central State Historical Archive of Ukraine in Lviv, 19/7, units 145, 248, 255, 351, 19/8, unit 170; Józef Szymański (ed.), Państwo wojnickie w metryce józefińskiej z 1785–1787 roku,

20 Piotr Miodunka, Could residents of Polish small towns actually be considered farmers? (paper presented at 13th International Conference on Urban History, Lisbon 4th–6th Sept. 2014), 2–3.

Wojnicz 2000, 14–31; Zofia Daszyńska-Golińska, Uście Solne. Przyczynki historyczno-statystyczne do dziejów nadwiślańskiego miasteczka, Kraków 1906, 100, 117; Bogdan Stanaszek, Terytorium, zabudowa i ludność Brzostku w pierwszym półwieczu rządów austriackich w Galicji, in: Bogdan Stanaszek, Z dziejów Brzostku. Studia i materiały, vol. 2: Okres staropolski i czasy zaborów, Brzostek 2009, 133–163; Józef Półćwiartek, Panowie feudalni na Kolbuszowej i ich majętność w XVII–XIX wieku, in: Jacek Bardan (ed.), Kolbuszowa. 300 lat miasta. Materiały z sesji naukowej, 6–7 X 2000 r., Kolbuszowa 2001, 9–21, 18–20; Kazimierz Karolczak, W czasach absolutyzmu austriackiego, in: Feliks Kiryk (ed.), Limanowa. Dzieje miasta, vol. 1: 1565–1945, Kraków 1999, 213–254; Łukasz Jewuła, Galicyjskie miasta i miasteczka oraz ich mieszkańcy w latach 1772–1848, Kraków 2013.

The mean area of arable land and gardens per urban farm tended to be well below the five hectares considered the minimum necessary to feed a family. Nonetheless, the mean says little about the actual distribution of the size of plots owned by individual householders (Table 7).

Table 7a and 7b: Distribution of the sizes of urban farms in selected towns in 1785 (%)

Farm size (ha)	Mielec n=108	Pilzno n=104	Przecław n=86	Radomyśl n=136	Skawina n=127	Wojnicz n=119
> 15	1.9	2.9	-	0.7	3.9	2.6
10 – 15	0.9	1.0	-	2.9	3.9	0.8
5 – 10	7.4	12.5	4.7	10.3	27.6	5.9
2 – 5	21.3	8.6	22.1	27.9	32.3	19.3
1 – 2	8.3	18.3	24.4	24.3	15.0	16.8
< 1	60.2	56.7	48.8	33.8	17.3	54.6

Farm size (ha)	Brzostek n=74	Tymbark n=59	Uście Solne n=237	Zakliczyn n=161
> 11.5	2.7	-	0.4	-
5.8 – 11.5	5.4	25.4	7.2	1.9
2.9 – 5.8	18.9	27.1	16.0	8.1
1.2 – 2.9	25.7	27.1	30.4	20.5
0.6 – 1.2	20.3	8.5	22.4	9.3
< 0.6	27.0	11.9	23.6	60.2

Note: The two divergent classifications by size brackets are necessitated by the use of different sources: firstly, the original data, which were converted from Austrian measures, and secondly, published studies with data without conversion from the Austrian *Joche* and *Klafter*.
Source: see Table 6.

The data from ten of the towns cited here have one fundamental feature in common: in all of them there were very few larger farms with over ten hectares of agricultural land, or even no such holdings at all. We might attempt a classification of these towns into three types by spread and relative numbers of farms of various sizes. The first type, represented by the largest

number of towns in the table (Brzostek, Mielec, Pilzno, Uście Solne, and Wojnicz), is characterised by a high degree of polarisation. In each of these towns there was a small group of large and very large farms over ten hectares, while the vast majority of the townspeople possessed only garden plots less than one hectare in size. A variant on this type is that represented by two small towns (Przecław and Zakliczyn) in which there was an elite band of urban farmers, but even the largest farms were little over five hectares in size.[21] Third, there is the distinctly egalitarian type (Radomyśl, Skawina, Tymbark); in these towns, medium-sized farms (in the size range from two to ten hectares) were far more numerous, while burghers owning only garden plots constituted a relatively small minority.

Sporadic earlier data (variously local land inventories or tax registers) sourced from towns in the "elite" category (Mielec 1548, Zakliczyn 1567, Wojnicz 1660, 1734, 1752, and Pilzno 1772) confirm that a similar distribution of urban farm sizes had been in evidence for a long time.[22]

Given the lack of extensive studies and available statistics, little can be said on the fragmentation of urban land in the nineteenth century. The examples of small towns studied – Limanowa and Uście Solne – show that there was some correlation with demographic development.[23] In Limanowa, which as a seat of district administrative offices from the mid-nineteenth century saw a marked increase in its population, urban farms became progressively smaller and more fragmented. In Uście Solne, which saw demographic stagnation for over one hundred years, the farm structure in 1900 was very similar to that recorded in the Josephine Cadastre.

Types of production

Grain production and other field crops

In the Early Modern period, agriculture in both urban and rural settings was dominated by grain crops. The proportions of particular cereals were determined by environmental conditions and by the production profile of the town. In small towns which had good soil, such as Uście Solne, the main crops were barley and wheat, which were processed into beer that was sold in places such as Kraków. Data from 16 small towns for the 1780s collected in the Josephine Cadastre seem to suggest that these two cereal crops were far more frequently grown by urban farmers than by peasants. In submontane towns such as Nowy Targ, oats constituted around 85 percent of cereal output. Aside from the four main grain crops, buckwheat, millet, and peas were also sown.

These conclusions notwithstanding, the volume of crop production and the overall degree of self-sufficiency of towns is a very interesting question. Although the majority of townspeople had too little land to produce enough grain, it may have been the case that the

21 Limanowa as described by Franciszek Bujak in: Limanowa: miasteczko powiatowe w zachodniej Galicyi. Stan społeczny i gospodarczy, Kraków 1902, 30, seems to have been representative of a similar type.

22 Miodunka, Demograficzny, 149.

23 Bujak, Limanowa, 65–67; Zofia Daszyńska-Golińska, Uście Solne. Przyczynki historyczno-statystyczne do dziejów nadwiślańskiego miasteczka, Kraków 1906, 99–102.

minority was able to supply the shortfall. There are few Polish studies regarding the issues of how towns were fed, and consumption in cities. The classic monograph by Andrzej Wyczański is devoted mainly to rural populations and spans only the sixteenth and early seventeenth centuries.[24] There are also a few studies concerning two larger Polish cities: Gdańsk and Poznań.[25] A simple calculation was proffered by Jerzy Ochmański, who assumed that an urban family of six needed 1,800 kilogrammes of grain per year.[26] This seems rather excessive, as does Wyczański's calculation. By way of comparison, Annika Björklund assumes a grain consumption in eighteenth-century Swedish towns of approximately 202 kilogrammes per resident.[27] The most controversial figure is that for beer consumption. I would assume that a normal consumer required about 20 kilogrammes of barley annually for beer production. Following the cited studies, and others which underline the great importance of rye for the common people in pre-industrial Poland, I would propose an annual quantity of grain consumption and distribution over the four main grains as follows (Table 8), equivalent to a daily consumption of 2,140 kilocalories.

Table 8: Estimated annual grain consumption per adult consumer in the eighteenth century

Type of grain	Annual consumption (kg)*	Distribution (%)
Wheat	25	11.4
Rye (incl. proso millet)	120	54.5
Barley (incl. buckwheat)	65	29.6
Oats	10	4.5
Total	220	100.0

* To convert the amount of groats to grain I assumed that a given weight of grain (for all kinds of cereals: barley, proso millet, and buckwheat) produced only 50 percent of that weight in groats.

Data on average yearly harvests were gathered for 16 towns. As mentioned above, only the four main grains were taken into consideration. The original cadastral surveys give figures for average three-year gross harvests, eliminating the need for certain complicated conversions associated with different types of crop rotation.[28] Seed for the next year was deducted,

24 Andrzej Wyczański, Studia nad konsumpcją żywności w Polsce w XVI i w pierwszej połowie XVII w., Warszawa 1969. This work has been translated into French: La consommation alimentaire en Pologne aux XVI^{e} et XVII^{e} siècles, Paris 1985.

25 Jan Baszanowski, Konsumpcja zbóż, mięsa i masła w Gdańsku w połowie XVIII wieku, in: Kwartalnik Historii Kultury Materialnej 32/4 (1982), 491–523; Bogusław Więcławski, Zaopatrzenie i konsumpcja w Poznaniu w drugiej połowie XVIII wieku, Warszawa 1989.

26 Jerzy Ochmański, W kwestii agrarnego charakteru miast Wielkiego Księstwa Litewskiego w XVI wieku, in: Aleksander Gieysztor et al. (eds.), Studia Historica. W 35-lecie pracy naukowej Henryka Łowmiańskiego, Warszawa 1958, 279–294, 291.

27 Annika Björklund, Historical urban agriculture. Food production and access to land in Swedish towns before 1900, Stockholm 2010, 128–129.

28 Where three-field rotation was used, the harvests from two years (winter and spring crops) were noted. If a two-field rotation without fallow was practised, then the harvests from a year and a half for both cereals were calculated.

of course, leaving about 71 percent of harvests for consumption.[29] After calculating the net annual output of the four main cereal crops, it is possible to establish both the level of self-sufficiency in each grain type for each town, and the overall level of grain self-sufficiency using weighted averages of self-sufficiency levels for each particular crop (Table 9).[30]

The information in Table 9 invites a number of conclusions and generates further questions. First, it is clear that there was no universal model of farming in towns. It depended above all on soil fertility, but also on other factors. Another surprising conclusion is that little rye was cultivated in any of the towns. The absence of certain crops in some towns despite information about their cultivation in earlier periods is, however, very suspicious. This is the case in Nowy Targ, where many sources document that rye was cultivated both before and after the 1780s, and there is certainly no doubt that wheat was grown from the sixteenth to the eighteenth centuries.[31] At the other end of the scale we have the cases of Rzochów and Uście Solne, where unexpectedly large quantities of wheat and barley were apparently produced.

The relation between grain supply and the overall threshold of self-sufficiency for the towns' Christian populations varied, but as a rule production was too low, reaching less than half of the volume needed for consumption. It is also important to note the considerable spread of this variable – from less than 20 percent in submontane towns to almost 70 percent. This divergence increases further still if we take into account the entire population, including the Jewish population, which did not cultivate the land but was quite sizeable in some towns. Of course, we must remember that consumption patterns could also vary according to local production. For example, people in Rzochów and Uście Solne may have eaten more wheat bread than those in other towns. This hypothesis is supported by the survey of 1877, which shows immense local differences in grain consumption; in Nowy Targ county, for instance, oats were listed as the most popular cereal consumed by peasants.[32] We should also take into consideration that the data generally ignore output from gardens, where cereals were sometimes also cultivated, but above all peas. Potatoes were still a garden plant in the 1780s, so they were of little importance in people's diets. This leads to the conclusion that the amount of food obtained from plant production, and in consequence the level of self-sufficiency, was probably in fact slightly higher than that calculated above. This does not alter the fact that none of the towns analysed produced enough grain even for their own Christian populations.

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29 In the case of wheat, rye, and barley, where yield was 3.5 grains to one sown, output is assumed to be on average 71% of total harvests. In the case of oats this ration was only 67%, at a yield of three grains from one sown. Grain was not tithed because the tithe was often levied in monetary form.

30 Where production of a given grain was higher than the theoretical demand for consumption, a level of 100% is assumed. The final result is a weighted average (based on coefficients from the third column of Table 8) of figures for each grain type (the ratio of people whose needs could be satisfied to total normal consumers). The results obtained are fuller than those offered by Björklund, Historical urban agriculture, who was only able to calculate the overall grain output of Swedish towns.

31 Mieczysław Adamczyk, Miasto w latach 1770–1867, in: Mieczysław Adamczyk (ed.), Dzieje miasta Nowego Targu, Nowy Targ 1991, 163–194, 167; Kazimierz Baran et al., Z przeszłości Nowego Targu, Nowy Targ 1948, 156–157; S. Czajka, W pierwszej Rzeczypospolitej (1573–1770), in: Adamczyk (ed.), Dzieje miasta Nowego Targu, 71–113, 83, 103, 104.

32 In most highland counties there was no wheat consumption. The quantities of grain intake indicated by county authorities are probably unreliable, but the proportions may be plausible. Józef Kleczyński, Stosunki włościan w Galicyi, in: Wiadomości Statystyczne o Stosunkach Krajowych 7/1 (1881), 5–86, 74–76.

Table 9: Level of grain self-sufficiency in selected towns in 1785–1787

	Population (1800)		Level of self-sufficiency in four cereals (%). Christians only*				Total level of self-sufficiency (weighted average, %)	
Town	Christians	Total	Wheat	Rye	Barley	Oats	Christians only	Total population
Brzesko	550	1,215	0	21	17	105	21	12
Brzostek	613	613	97	42	117	105	68	68
Czchów	1,330	1,358	8	34	37	156	35	34
Dobczyce	1,780	1,780	66	49	27	228	47	47
Kolbuszowa	724	1,286	0	38	3	181	26	17
Limanowa	450	473	11	3	28	278	16	15
Lipnica Murowana	735	735	0	53	81	132	57	57
Mielec	1,090	2,076	15	23	12	238	22	14
Myślenice	1,939	1,939	12	14	14	92	17	17
Nowy Targ	2,454	2,463	0	0	23	858	11	11
Pilzno	1,229	1,246	39	22	16	167	26	26
Radomyśl	877	1,238	23	51	61	153	53	39
Rzochów	457	491	331	6	122	22	45	45
Skawina	803	803	50	67	57	337	64	64
Uście Solne	1,253	1,253	425	23	196	13	54	54
Wadowice	1747	1747	39	45	14	424	38	38

* Following Annika Björklund (Historical urban agriculture, 130), a coefficient of 0.8 was applied to convert total town populations to numbers of normal – that is, adult – consumers. This is close to Tadeusz Sobczak's (Przełom w konsumpcji spożywczej w Królestwie Polskim w XIX wieku, Wrocław 1968, 21, 22) estimates (0.77) based on the population of the Warsaw department in 1810.

Source: author's own work based on: Central State Historical Archive of Ukraine in Lviv, collection 19, I/10, I/20, I/84, I/175 (via: https://www.familysearch.org/search/catalog), VII/145, VII/248, VII/351, VII/367, VIII/124, VIII/170; Feliks Kiryk, Opis gruntów gminy katastralnej Nowy Targ w Metryce Józefińskiej z 1785–1787 r., in: Mieczysław Adamczyk (ed.), Dzieje miasta Nowego Targu, Nowy Targ 1991, 267–274; Konrad Meus, Wadowice 1772–1914. Studium przypadku miasta galicyjskiego, Kraków 2013, 168; Kazimierz Karolczak, W czasach absolutyzmu austriackiego, in: Feliks Kiryk (ed.), Limanowa. Dzieje miasta, vol. 1: 1565–1945, Kraków 1999, 213–254, 230; Zofia Daszyńska-Golińska, Uście Solne. Przyczynki historyczno-statystyczne do dziejów nadwiślańskiego miasteczka, Kraków 1906, 100, 117; Bogdan Stanaszek, Terytorium, zabudowa i ludność Brzostku w pierwszym półwieczu rządów austriackich w Galicji, in: Bogdan Stanaszek (ed.), Z dziejów Brzostku. Studia i materiały, vol. 2: Okres staropolski i czasy zaborów, Brzostek 2009, 133–163; Józef Półćwiartek, Panowie feudalni na Kolbuszowej i ich majętność w XVII-XIX wieku, in: Jacek Bardan (ed.), Kolbuszowa. 300 lat miasta, Kolbuszowa 2001, 9–21, 18–20.

Cultivation of potatoes in towns is first documented at a relatively early date – in the 1780s. This crop probably spread rapidly in urban conditions because its higher yields allowed the typically small allotments of townspeople to generate enough food to feed their families.[33] We have no quantitative data to support this thesis, but the spread of potato cultivation certainly contributed to a rise in the level of food self-sufficiency in towns – especially those with slower population growth – over the course of the nineteenth century.

Until the end of the eighteenth century, it is hard to speak of any particular system of crop cultivation in towns. Several factors played a role. The classic three-field system was employed essentially only by larger farms, cultivation without fallow on well-fertilised fields, and long-term rotation systems on more distant plots and the least fertile soils. In the nineteenth century, after the introduction of potatoes and clover as urban crops, a form of crop rotation including them was implemented. On the whole, however, in spite of the reduction of the influence of soil-related factors as fertilisation with natural fertilisers improved and artificial fertilisers were introduced, only larger burgher farms had more extensive possibilities for employing crop rotation. Franciszek Bujak, describing the small town of Limanowa around 1900, found that agrarian farming using crop rotation was only viable for burghers with more than one hectare of land – less than 20 percent of the town's population. The rest grew only potatoes and cabbages. The former crop took up approximately 30 percent of the land cultivated by the townspeople of Limanowa in that period, wheat and clover a further 20 percent respectively, oats 15 percent, and the remaining 15 percent was divided between various other crops.[34]

Livestock

The extent of animal husbandry in the towns of Lesser Poland is a difficult issue to research, particularly for the period prior to the partitions. After 1772 the greatest quantity of information refers to draught animals, meaning horses and oxen, records of which were kept for the army's purposes. According to the earliest data, which are from 1773 and cover three towns (Lanckorona, Pilzno, and Skawina), townspeople did not keep a very impressive number of teams. Counting two oxen as the equivalent of one horse, there were just five to six horses per 100 inhabitants in those towns, and in practice only 20 to 30 percent of households owned any at all. It was extremely rare for a burgher to have both horses and oxen.[35] This seems to have been a sufficient quantity, however, since townspeople were not subject to the corvée, unlike landed peasant farmers, and rarely engaged in trade. There was also the possibility – and we know it was used – of employing local peasants for field labour.

According to the military's population and livestock census of 1799, oxen were more numerous in both large and small towns, but they were kept in greater number than horses chiefly in submontane regions or in areas with a dominance of heavy, fluvial soils. In this

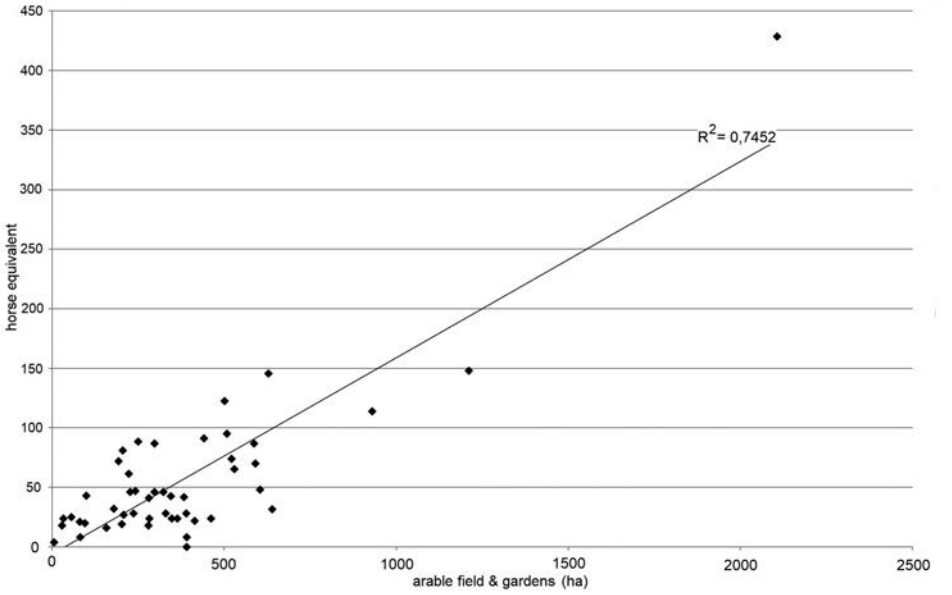
33 Piotr Miodunka, L'essor de la culture de la pomme de terre au sud de la Pologne jusqu'au milieu du XIX^{e} siècle, in: Histoire & Sociétés Rurales 42/2 (2014), 67–84.

34 Bujak, Limanowa, 67–69.

35 Central State Historical Archive of Ukraine in Lviv, 146/16 units 354, 575, 1621 (tax lists of 1772/73).

period there were 4.4 horses (or equivalents) per 100 townspeople.[36] This ratio was fairly well correlated with the overall area of fields and gardens owned by the population (Figure 1, Table 10).

Figure 1: Relation of number of horse equivalents to area of arable fields and gardens in 1799



Source: see Table 1; National Archive in Krakow: Teki Schneidra, Military census 1799.

Table 10: Number of horse equivalents in towns 1799–1921

	1799/1800	1815	1824	1900*	1921*
Number of towns	49	32	20	65	47
Horse equivalent per 100 inhabitants	4.4	3.6	5.9	1.9	2.0

* Horses only
Sources: National Archive in Krakow: Teki Schneidra, Military censuses 1799, 1815, 1824; Gemeindelexikon von Galizien, Wien 1907; Skorowidz miejscowości Rzeczypospolitej Polskiej, vol. 12: województwo krakowskie, Śląsk cieszyński, Warszawa 1925.

Later data show a decline in numbers of draught animals in towns after the Napoleonic wars, but a marked rise in subsequent years. Horse numbers fell in the second half of the nineteenth

36 Data from 49 towns.

century, in the context of a gradual cessation of use of oxen, but above all in larger towns. In less developed towns (which from the end of the nineteenth century were no longer subject to urban laws), there were still five horses per 100 inhabitants in the year 1900.[37] Comparison with the data for all types of settlements reveals that in the first half of the nineteenth century, the ratio of draught animals to population was over 2.5 times higher in the countryside than in towns, while in later periods this difference increased further.

The most significant type of animal husbandry was cattle rearing. According to the lists from 1773, the three towns they covered each had between 17 and 52 cows per 100 residents, meaning that, statistically speaking, every family had at least one head of cattle. The reality was somewhat different, but cows were owned by between 59 and 86 percent of burgher households. The further development of cattle rearing is shown in Table 11. It is worth noting that in the early part of this period only twice as many cows were kept in the countryside as was the case in towns, but by 1900 this proportion had risen to almost four times more.

Table 11: Cows in towns, 1815–1921

	1815	1824	1900	1921
Number of towns	32	20	65	47
Cows per 100 inhabitants	14.0	16.6	10.5	9.8

Source: see Table 10.

The number of cows per 100 townspeople was highest in 1824, but in the second half of the century it fell at a slower rate than did that of draught animals. As late as 1921, Tarnów – at a population of 35,000 the second largest city in this part of Poland after Kraków – still had 747 cows. In less developed towns, in the year 1900 the scale of cattle rearing was still very large, at a mean of 30.5 head per 100 inhabitants. Official data on livestock numbers tend to come from the winter months, but we also have information from the early twentieth century which shows that some townspeople purchased extra cattle for the summer only. In previous periods, given the poorer access to fodder, this practice can only have been more common.[38]

Livestock rearing was correlated in certain respects with the area of meadow and pastureland at the townspeople's disposal; this correspondence is more clearly visible in 1900 than a century earlier. Initially there was no clear connection between the population of a given urban centre and the relative volume of livestock rearing, expressed in numbers of animals per 100 inhabitants. This situation was essentially unchanged in the year 1900, except for the fact that for towns of over 10,000 this indicator was at a consistently low level, rarely exceeding five cows per 100 people.

Very few statistics are available for pig rearing. Trade in swine, which was popular in many towns in Lesser Poland in the eighteenth and nineteenth centuries, did not translate into numbers kept on farms. In the two towns for which we have data, in 1773 there were seven pigs per 100 residents. The next available data – which do not appear until 1900 – may suggest a certain decline in the significance of pig rearing, to 5.4 pigs per 100 residents. However, it is

37 16 towns with populations of between 730 and 2,300.

38 Bujak, Limanowa, 72. The regulations for use of common pastureland in Pilzno from 1652 confirm this pattern (National Archive in Krakow, Pilzno city files, 113A, 265).

important to note that while in towns that had retained their urban status in the nineteenth century this ratio was 4.7, in centres with only historic urban charters, it was as high as 12 pigs per 100 inhabitants.[39]

Sheep rearing was of marginal and diminishing significance, except in a few highland towns with extensive pastureland: Krościenko, Muszyna, Nowy Targ, Piwniczna, and Tylicz. In these five towns in 1900, the level of sheep husbandry was almost high as in the countryside, at 13 animals per 100 residents versus 18 per 100.[40]

Others

Many sources indicate that the towns of Lesser Poland specialised in fruit-growing – meaning that some, or even most, of the allotments were orchards, comprising above all plum, apple, and pear trees. Industrial crops such as flax and hops were probably cultivated, though more extensively in some regions than others. We do not know whether an attempt at tobacco growing in the mid-eighteenth century in the town of Wojnicz was successful, or whether it was also practised in other small towns.[41] For some places we also have information concerning beekeeping.[42]

Strategies of urban farmers

It is hard to establish with any precision the significance of agriculture in the towns of southern Lesser Poland. The information given to the new Austrian authorities at the end of the eighteenth century by landowners themselves, or by tenants in the case of former royal towns, emphasised the considerable importance of agrarian activities and suggested that crafts were essentially a sideline, pursued above all in the winter.[43] The few detailed studies contradict this picture, pointing first to the small size of most urban farms and second to the ubiquity of artisanry – though this was restricted to a very few crafts, chiefly shoemaking and linen weaving – and of trade, such as that in pigs. Nonetheless, land undeniably provided the wherewithal for satisfaction of at least a minimum of a family's own needs, and possession of a garden, small field, or meadow – at least sufficient to feed a cow – was a privilege keenly fought for. The lack of draught animals – which were not common in towns – was made good by hiring local peasants with their teams. Bujak mentions this expressly in his description of relations in Limanowa, which had 1,800 inhabitants in the year 1900. The townspeople considered themselves above working in the fields but were happy to oversee the work of hired

39 We may assume that in towns in southern Poland cow breeding was less popular and pig breeding more so than in Danish towns: Trine Lockt Elkjær, Market town agriculture, in: Søren Bitsch Christensen/Jørgen Mikkelsen (eds.), Danish towns during absolutism. Urbanisation and urban life 1660–1848, Aarhus 2008, 263–289, 280.

40 The counties of Nowy Sącz and Nowy Targ.

41 Miodunka, Lessor, 73.

42 Daszyńska-Golińska, Uście Solne, 113.

43 See footnote 3.

peasants. The only tasks that did not impugn the burghers' dignity were digging potatoes and bringing in the mown crops at harvest.[44]

The ubiquity of keeping at least a single cow and sowing even small plots of land with cereal crops, particularly until the end of the eighteenth century, meant that stables and barns adjacent to homes were commonplace in towns. Barns might also be located in dedicated areas outside the interior urban matrix of the market square and surrounding streets.[45]

A different strategy is evidenced among the narrow stratum of those who owned the largest urban farms. For this group, who tended to also practise lucrative crafts or trade, the farm not only supplied considerable income, but was also a symbol of prestige.[46] Where arable land was concentrated on a single site, a complex of residential and farm buildings would be erected alongside it, and after the manner of the gentry would be called a *folwark* or manor farm. Like those of the gentry, larger urban farms also evolved into agricultural enterprises which processed their cereal crops in their own breweries. What is more, in the small town of Pilzno at the end of the eighteenth century, wealthy urban farmers settled peasants as their own serfs. Burghers in Myślenice and Pilzno pursued a policy of expansion beyond their modest urban plots by leasing land from peasants in the adjoining villages. After 1848, when restrictions on purchasing land from the gentry were lifted, the same was practised at Limanowa in respect of lands owned by the gentry. Ultimately, in the second half of the nineteenth century, when many noble estates were put up for auction and sold off, townspeople began to buy up individual manor farms, thus essentially themselves becoming the landed class, as at Radomyśl.[47]

Summary: the agricultural *longue durée* in Polish towns

The functioning of agriculture in the towns of southern Poland is a good example of the *longue durée* as expounded by Braudel. Endowment with gardens, arable land, meadows, and pastures was a vital element of every town foundation. The provision of arable land was essentially proportional to the projected size of the town. In view of the economic crisis of the seventeenth century, the decline of active urban life in pre-partition Poland, and the consequent attractiveness of the landed gentry model, possession of a plot of land or even a small urban farm was a priority for burghers, not only for economic reasons. This state of affairs persisted in Galicia, a part of the Austrian Monarchy, until the mid-nineteenth century, when with the enfranchisement of the peasants and burghers in 1848 and the abolition of the monopoly of guilds in 1859, the time-sanctioned privileged role of towns over villages changed. The expansion of the railways after 1856 and the administrative reforms of 1855 and 1867 brought growth to some towns, while others stagnated in their old structures. In the former, agriculture very gradually began to wane in significance, though as recently as in

44 Bujak, Limanowa, 70.

45 Good examples are: the towns of Rudnik, http://www.skany.przemysl.ap.gov.pl/show.php?zesp=126&cd=0&ser=0&syg=1440M, and Skawina, http://mbc.malopolska.pl/dlibra/doccontent?id=18648 (last visited 30 Apr. 2018).

46 In the town of Pilzno, Wojciech Rządzki, a rich coppersmith, had the most animals: 4 horses, 4 oxen, 4 cows, 6 head of young cattle, 3 sheep, and 5 pigs (Central State Historical Archive of Ukraine in Lviv, collection 146/16, unit 1621).

47 Miodunka, Demograficzny, 151.

the interwar period (1918–1939) members of rich burgher families still took pride in running large farms, or in some cases ascended directly into the landed classes by purchasing indebted noble estates. In small towns on the periphery of change, crop cultivation (particularly after the spread of potatoes), and to an even greater extent cattle rearing, remained extremely important, at least until the period between the world wars.

Setting aside the issues of long-term patterns and cultural influences as explanatory factors, it appears that we are closer to defining the actual role of agriculture in Polish towns. Without a doubt, both crop cultivation and livestock had an important but supplementary function. This applied, though on different scales, to poor shoemakers as well as to rich merchants or brewers. Nonetheless, not even the smallest towns were self-sufficient, at least in terms of production of cereal, which was the dominant feature of the diet in this period. Thus, in small and medium-sized Polish towns, crafts and services for the local market, as well as slightly supralocal trade, supplied residents with the means to meet their food consumption needs, not to mention other needs. These settlements therefore had multiple economic functions as centres of agriculture, manufacture, and trade, and possessed the characteristics of the *Ackerbürgerstadt* as enumerated by Max Weber.[48] The conclusions of Henryk Samsonowicz, who sees in the burgher farmers a distinct, numerically significant professional group, varying in social and material status but sharing agriculture as their primary means of support, would seem to be a considerable oversimplification.[49] The problem of Polish cities was not so much the ubiquity of typically agricultural occupations, but the protracted nature of that state, which persisted well into the nineteenth century. Further research is necessary to fully explain the factors which contributed to such ossification of this urban economic model. It would also be interesting to study in greater detail the process of gradual but relatively slow departure from urban farming, which began in some centres in the second half of the nineteenth century but was not completed until the period of rapid industrialisation after World War II.

48 Max Weber, Economy and society, Berkeley 1978, 1217–1218.

49 Henryk Samsonowicz, Ackerbürgertum im östlichen Mitteleuropa, in: Kurt-Ulrich Jäschke/Christhard Schrenk (eds.), Ackerbürgertum und Stadtwirtschaft. Zu Regionen und Perioden landwirtschaftlich bestimmten Städtewesens im Mittelalter, Heilbronn 2002, 89–98, 97.

Pieter De Graef / Wouter Ronsijn

From Home Food Production to Professional Farming

The Social and Geographical Continuum of Urban Agriculture: Nineteenth-century Oudenaarde and Kortrijk, Belgium

Abstract: We explore the geographical and social continuum of food production in and around towns in nineteenth-century Belgium. We do so by using household-level data for two Flemish towns, Oudenaarde and Kortrijk, which allow us to reconstruct variation in agricultural activities depending on the location and profession of the households. We find a sharp distinction between households living in the town cores and those living outside the agglomeration, as well as between those reporting agricultural and non-agricultural professions. Outside the town walls, production strategies differed little from the surrounding countryside. In contrast, the focus in the urban cores was on high-yielding vegetables and potatoes, and on specific livestock production. Only a small minority of ca. 10 per cent of urban households occupied agricultural land. Those who did were able to cover much of their subsistence needs for vegetables and potatoes, but not for cereals.

Key Words: urban agriculture, social property relations, allotments, gardens, markets, Thünen

Our daily caloric intake and hence our food security depend to a great extent on a food regime characterised by worldwide trade in a select number of key agricultural products.[1] This food regime of globalisation and specialisation has freed a large share of the world population from undernourishment and lowered poverty levels. Yet, this food system is not without problems. The large number of 'food miles', problems of soil fertility mining in peripheral regions, and over-fertilisation in core areas compromise the ecological sustainability of agriculture. In addition, high volatility in incomes following trade liberalisation and the dismantling of price-supporting policies severely affects its economic sustainability.[2]

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1 On the concept and historical background of food regimes: Harriet Friedmann/Philip McMichael, Agriculture and the state system: the rise and decline of national agricultures, 1870 to the present, in: Sociologica Ruralis 29/2 (1989), 93–117; Henry Bernstein, Agrarian political economy and modern world capitalism: the contributions of food regime analysis, in: The Journal of Peasant Studies 43/3 (2016), 611–647.

2 Robert Bailey/Laura Wellesley, Chokepoints and vulnerabilities in global food trade (Chatham House Report), London, June 2017, https://www.chathamhouse.org/publication/chokepoints-vulnerabilities-global-food-trade

Consequently, a growing number of scholars and policy think tanks have started looking for alternatives. In meeting local food demand by local food production, the potential of urban and peri-urban agriculture comes to the front as part of the solution. Whereas initiatives to revitalise allotment gardening were until recently often geared towards leisure and community-building purposes,[3] nowadays discourse on urban farming is shifting toward issues of the sustainability and resilience of food production and access to food, both in the global south and north. This concerns both home food gardens and alternative revenue models for urban farmers, such as community-supported agriculture and direct marketing at the farm gate or at nearby farmers' markets.[4]

In a recent literature review, Ruth Glasser observed that history is largely absent from the debate on urban agriculture, attributing this neglect to the misguided idea that the extent of food production within cities was marginal and that it was incompatible with modern conceptions of urbanity. Against this misperception, Glasser pointed out that farming in cities remained important into the twentieth century in the Northeast of the US.[5] Also in Western Europe, food production was a common feature in and close to cities until industrialisation and modernisation gradually dissociated farming from city life.[6] In the medieval and early modern periods, when long-distance transport was much more of a constraint for the supply of quickly perishable dairy and horticultural products than today, producing these goods locally was imperative. According to Peter Atkins, urban agriculture continued to play this role in the nineteenth century until railway transportation facilitated the supply of rural milk and vegetables.[7] Agricultural historians, too, have tended to neglect urban farming.

(last visited 8 Aug. 2019); Jason Moore, Environmental crises and the metabolic rift in world-historical perspective, in: Organization and Environment 13/2 (2000), 123–157.

3 E.g. Jonathan Kingsley/Mardie Townsend, 'Dig in' to social capital: community gardens as mechanisms for growing urban social connectedness, in: Urban Policy and Research 24/4 (2006), 525–537; Leigh Holland, Diversity and connections in community gardens: a contribution to local sustainability, in: Local Environment 9/3 (2004), 285–305; see also Stephanie Rogus/Carolyn Dimitri, Agriculture in urban and peri-urban areas in the United States: highlights from the census of agriculture, in: Renewable Agriculture and Food Systems 30/1 (2014), 64–78, 64.

4 Among others, see Nathan McClintock, Why farm the city? Theorizing urban agriculture through a lens of metabolic rift, in: Cambridge Journal of Regions, Economy and Society 3/2 (2010), 191–207, 191; John R. Taylor/Sarah Taylor Lovell, Urban home food gardens in the Global North. Research traditions and future directions, in: Agriculture and Human Values 31/2 (2014), 285–305; Joe Smith/Tomáš Kostelecký/Petr Jehlička, Quietly does it: questioning assumptions about class, sustainability and consumption, in: Geoforum 67/10 (2015), 223–332; Adrian Atkinson, Readjusting to reality: urban and peri-urban agriculture to ease the downward passage, in: City 17/1 (2013), 85–96; Susan Parham, Food and urbanism: the convivial city and a sustainable future, London 2015.

5 Ruth Glasser, The farm *in* the city *in* the recent past. Thoughts on a more inclusive urban historiography, in: Journal of Urban History 44/3 (2018), 501–518.

6 Gina Castillo, Livelihoods and the city: an overview of the emergence of agriculture in urban spaces, in: Progress in Development Studies 3/4 (2003), 339–344, 339–340.

7 On medieval French cities, see Jean-Pierre Leguay, Terres urbaines. Places, jardins et terres incultes dans la ville au Moyen Âge, Rennes 2009, and on early modern Paris, see Clément Gurvil, Les paysans de Paris du milieu du XV^{e} au début du XVII^{e} siècle, Paris 2010. However, Daniel Liévois has qualified this argument by showing that fruit travelled sometimes more than 20 kilometres before reaching the fruit market in Ghent, and this as early as the fourteenth and fifteenth centuries, Daniel Lievois, Fruit en fruitverkopers in Gent (1357–1542), in: Handelingen der Maatschappij voor Geschiedenis en Oudheidkunde te Gent 60 (2006), 75–144; Peter J. Atkins, Is it urban? The relationship between food production and urban space in Britain, 1800–1950, in: Marjatta

While shifting their attention to an integrated analysis of the so-called 'agro-food-chain' from production to consumption, they still mainly focus on rural farming, its social organisation, and its interaction with urban food demand and surplus extraction by (urban) landowners, leaving urban agriculture aside.[8]

Too strict a division of labour between urban historians on the one hand, and rural and agricultural historians on the other, risks perpetuating the neglect of urban farming, as the historical division of labour between the city and the countryside was less strict. Historians addressing urban agriculture and food provisioning, moving beyond the assumption of a sharp divide, instead emphasise the geographical continuum between rural and urban spaces. Arguing against the "widely held idea that the modern city entailed a sharp distinction between town and countryside", Baics and Thelle recently pointed out that "with accelerating urbanization, the two spheres intertwined ever more", as "[c]ities had to tap into expanding hinterlands to sustain their rapidly growing populations."[9] In addition, Glasser not only intends to "erase some of the false geographic dichotomy between what is a city and what is its hinterland", but also to "question the boundaries between farming, market gardening, and subsistence food-raised strategies, arguing that they too have taken place along a continuum within cities."[10]

Our goal in this paper is to look at this double, i.e. geographical and social, continuum. Regarding the geographical continuum, we question to what extent agricultural production in and near cities differed from that in the countryside. Agricultural location and bid rent theories often associate agriculture close to cities with specialisation in quickly perishable fruit, vegetables and dairy. Inspired by von Thünen and Boserup, they attribute specialisation in these products to the proximity of urban demand and to the competition for land by the housing market and the industry and service sectors.[11] Studies in urban agriculture indeed tend to focus on high-yield dairying or horticultural production (in both market gardens and home food gardens). They acknowledge that the theoretical model of the 'ideal city' was

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Hietala/Tanja Vahtikari (eds.), The landscape of food: the food relationship of town and country in modern times, Helsinki 2003, 133–144.

8 Alexander Nützenadel/Frank Trentmann (eds.), Food and globalization. Consumption, markets and politics in the modern world, London/Oxford 2008; Leen Van Molle/Yves Segers (eds.), The agro-food market: production, distribution and consumption (Rural economy and society in north-western Europe, 500–2000), Turnhout 2013; noticeable exceptions for Belgium: Yves Segers/Leen Van Molle, Workers' gardens and urban agriculture. The Belgian allotment movement within a global perspective (from the nineteenth to the twenty-first century), in: Zeitschrift für Agrargeschichte und Agrarsoziologie 62/2 (2014), 80–94, and the preliminary research on eighteenth-century urban farming in Alost by Reinoud Vermoesen, Boerende stedelingen of verstedelijkte boeren. Een verkennend onderzoek naar *Urban farming* in vroegmodern Antwerpen, in: Tijdschrift voor geschiedenis 128/4 (2015), 533–553.

9 Gergely Baics/Mikkel Thelle, Introduction: meat and the nineteenth-century city, in: Urban History 45/2 (2018), 184–192, 185.

10 Glasser, The Farm *in* the City, 503.

11 As observed in nineteenth-century Westphalian agriculture, see Michael Kopsidis/Nikolaus Wolf, Agricultural productivity across Prussia during the Industrial Revolution: a Thünen perspective, in: The journal of Economic History 72/3 (2012), 634–670; Michael Kopsidis, Northwest Germany, 1750–2000, in: Erik Thoen/Tim Soens (eds.), Struggling with the environment: land use and productivity (Rural economy and society in north-western Europe, 500–2000), Turnhout 2015, 356–357; Parham, Food and urbanism, 189–192. For a qualification of this model with nineteenth-century London as a case study, see Peter J. Atkins, The charmed circle: von Thünen and agriculture around nineteenth century London, in: Geography 72/2 (1987), 129–139.

distorted in practice by transport arteries (rivers, canals, high-quality paved roads) or soil type differences.[12] However, in most cases they do not refer to the social aspects of farming: the sizes of holdings or the place of these specialised products within the whole range of agricultural goods these urban households produced.[13] Yet rural historiography teaches us that the type of farming strongly depended on its social organisation, inviting us to study access to land and its distribution, the social property relations and the cropping patterns of the various social groups involved in urban agriculture.[14] The agricultural aims of these various social groups could range from merely relieving their family budget by growing foodstuffs in backyard gardens (home food growers), to commercialising a substantial part of their produce (commercial city farmers). Which of these two aims households followed depended on how much land they had access to. In turn, this also affected crop choice.

To study food production by different social groups in a nineteenth-century urban environment, we have selected two Belgian towns, Oudenaarde and Kortrijk. Both are located in the same agricultural region of inland Flanders. For both places, we have micro-level data allowing us to situate people involved in agriculture geographically (by location of residence) and socially (by profession). We use these data to gain insight into the basic characteristics of the urban agricultural economy by considering, firstly, the whole social continuum of urban food producers: commercially involved urban farmers, urban households combining farming with other activities such as proto-industry, and families having access to a home food garden for self-provisioning purposes. Secondly, we consider the geographical continuum, from producers living in the rural fringe to those in the inner town. Did producers close to the inner town indeed face constraints in access to land, i.e. were holdings smaller in the urban centres? Which of these producers specialised in food items benefitting from close proximity to urban markets, and which of them focused mainly on subsistence?

In a first section of this article, we introduce the two towns and the rural environment in which they were located, as well as the sources used for this paper. In the two following sections, we consider differences in access to land and in production choices by location and by profession. In the final section, we estimate to what extent urban households' food production was enough for their own requirements.

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12 Michael Limberger, Sixteenth-century Antwerp and its rural surroundings. Social and economic changes in the hinterland of a commercial metropolis (ca. 1450–ca. 1570), Turnhout 2008; Kopsidis/Wolf, Agricultural productivity, 643–644.

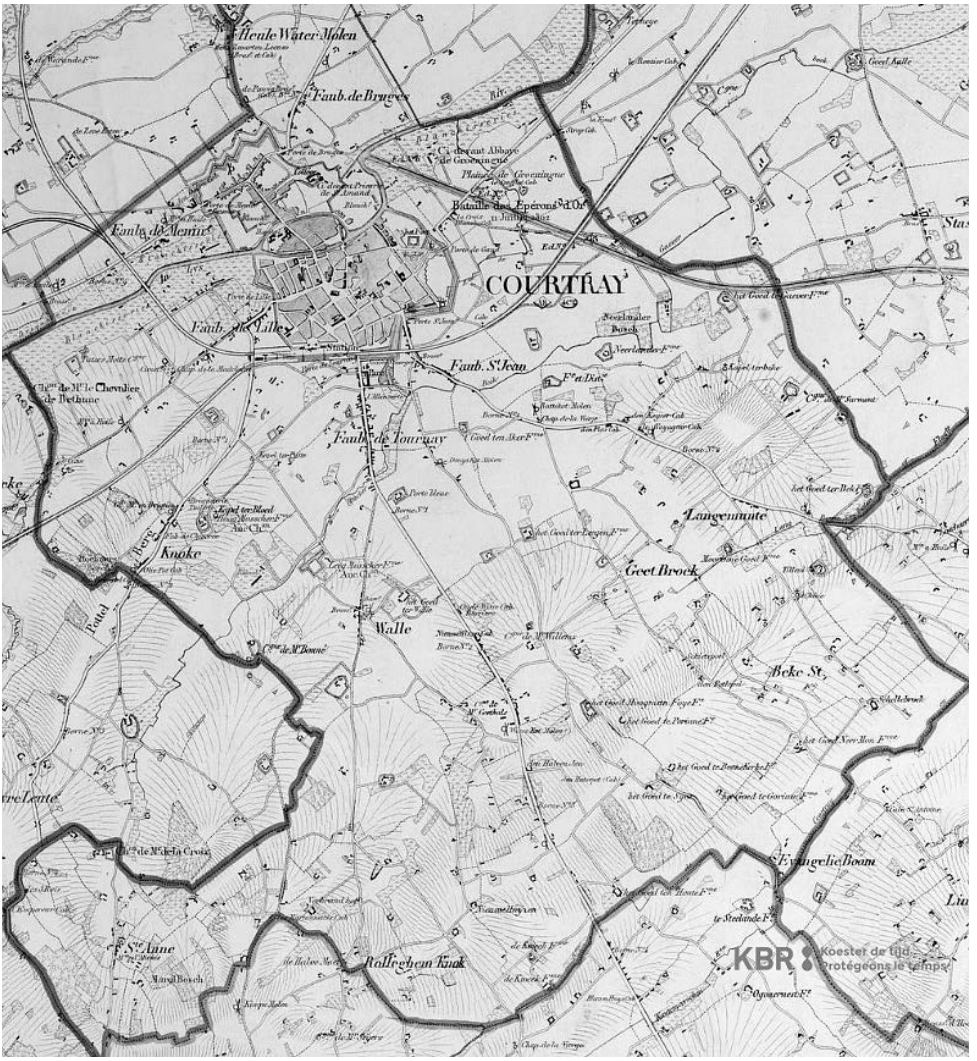
13 E.g. Atkins, Is it urban?; Jan Broadway, Gloucester gardeners 1650–1763, in: Transactions of the Bristol and Gloucestershire Archaeological Society 131 (2013), 209–220; G. Stanhill, An urban agro-ecosystem: the example of nineteenth-century Paris, in: Agro-ecosystems 3 (1976), 269–284. Studying the eighteenth-century small Flemish city of Alost, Vermoesen demonstrates that cereal cultivation figured in the rotation scheme of urban commercial farming, Vermoesen, Boerende stedelingen of verstedelijkte boeren, 533–553.

14 Recently summarised in the four volumes *Rural economy and society* and especially highlighted by Erik Thoen/Tim Soens, Contextualizing 1500 years of agricultural productivity and land use in the North Sea area. Regionally divergent paths towards the world top, in: Thoen/Soens (eds.), Struggling with the environment, 455–499; Bas van Bavel/Richard Hoyle, Introduction: social relations, property and power in the North Sea area, 500–2000, in: Bas van Bavel/Richard Hoyle (eds.), Social relations: property and power (Rural economy and society in north-western Europe, 500–2000), Turnhout 2010, 1–23.

Kortrijk and Oudenaarde in nineteenth-century inland Flanders

Following Scott and Storper, we consider urban settlements as concentrations or agglomerations of people and economic activities, interacting with each other as well as with other settlements. In their view, "urban or proto-urban places" are historically formed by the congregation of "a cohort of non-agricultural consumers" that can be maintained "when the

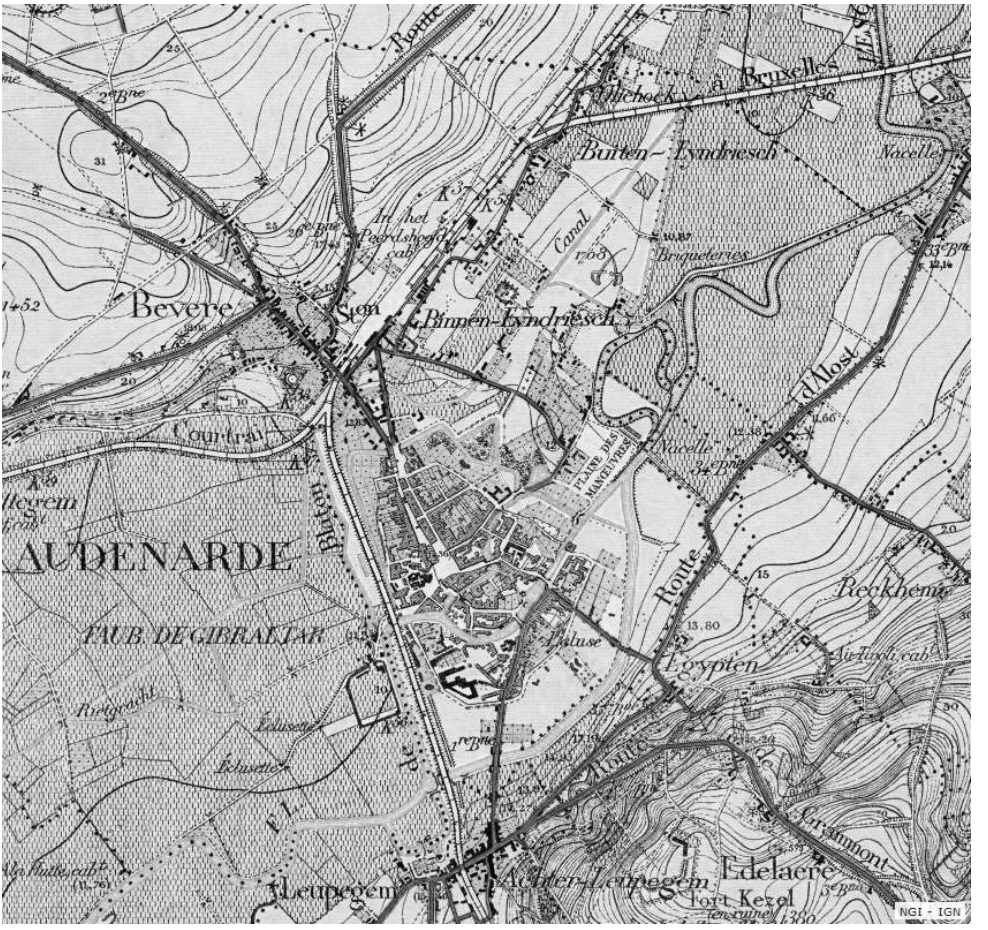
Figure 1: Topographic map of Kortrijk, ca. 1850



Source: Royal Library of Belgium, Etablissement géographique de Bruxelles fondé par Ph. Vander Maelen (ed.), Courtray, 1:20.000 (1849–1884), www.cartesius.be.

countryside generates an excess of production over subsistence needs".[15] The lower threshold of this agglomeration, in terms of number of people or population density, is left open for debate. This agglomeration gives rise to what they call the urban land nexus, the dynamic and interactive allocation of urban space among the productive (economic), social (residential), and circulatory (transportation) functions of cities and towns. Implicitly, Scott and Storper consider that land use for food production had only a marginal place in the urban land nexus.

Figure 2: Topographic map of Oudenaarde, 1884



Source: National Geographic Institute (ed.), Topographic map of Belgium at the scale of 1:20.000: Audenarde XXIX/4 (1884), (www.cartesius.be).

Based on these criteria, Oudenaarde and Kortrijk both qualify as urban areas in the middle of the nineteenth century. Firstly, each of the two towns mainly consisted of a densely populated

15 Allen J. Scott/Michael Storper, The nature of cities: the scope and limits of urban theory, in: International Journal of Urban and Regional Research 39/1 (2015), 1–15, 4.

urban core surrounded by walls. According to the 1846 population census, the urban centres of Oudenaarde and Kortrijk numbered 5,551 and 19,177 inhabitants respectively. Both towns also had jurisdiction over a territory outside their walls, where far fewer people lived: 356 in Oudenaarde and 2,394 in Kortrijk.[16] In Oudenaarde in the mid-1830s, population density in the urban core exceeded 10,500 inhabitants per km², while outside its walls this ratio came to slightly more than 300 per km².[17] Presumably, similar proportions applied in Kortrijk. While Kortrijk was considerably larger in area,[18] the two towns had a similar morphology, with a compact and densely built-up inner core. In other words, both places consisted of dense agglomerations which clearly stood out from the surrounding countryside.

Secondly, the two towns relied on surpluses of basic food produced in the surrounding countryside, although the output of urban farming was not negligible, as this paper will show. Oudenaarde and Kortrijk were both market towns where farming households sold food and other agricultural products. An enquiry of 1820 indicated the villages in a wide circle around the two towns as the main source of cereals for their markets.[19] In Oudenaarde, market supplies of cereals were just enough to feed the inhabitants.[20] In Kortrijk, the market satisfied only about half the demand,[21] suggesting that the town's bakers also had other sources of supply. Farming households from the surrounding countryside, by focusing on food production, pursued commercial and subsistence strategies simultaneously.[22] Around the middle of the nineteenth century, Belgium was already dependent on cereal imports, but the volume of imports was still modest compared to the period after 1870, when massive imports of foreign cereals shifted the orientation of agricultural production towards livestock farming and the cultivation of potatoes, vegetables and industrial crops.[23]

Thirdly and finally, Kortrijk and Oudenaarde had been nodes in the network of Flemish towns already since the middle ages.[24] In the nineteenth century, they were part of the connection between the surrounding countryside and smaller marketplaces, in one direction, and larger cities and international markets, in the other.

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16 Ministère de l'Intérieur (ed.), Population. Recensement général (15 octobre 1846), Première partie, Bruxelles 1849, 31, 52.

17 Wouter Ronsijn, De moeilijke jaren 1840 in Oudenaarde, unpublished licentiate thesis, Ghent University 2004, 32–33.

18 Ministère des Finances (ed.), Statistique territoriale du Royaume de Belgique, basée sur les résultats des opérations cadastrales exécutées jusqu'à la fin de 1834, Première publication, Bruxelles 1839, 69, 101.

19 Provincial Archives West Flanders, 1815–1830, 1st series, 440 (341b); Public Records Office Ghent, Province East Flanders Dutch period, 800.

20 Wouter Ronsijn, Commerce and the countryside. The rural population's involvement in the commodity market in Flanders, 1750–1910, Ghent 2014, 177–181.

21 Isabelle Devos, Prijzen van Granen en andere Landbouwprodukten in de Kasselrij Kortrijk (16de–19de eeuw), unpublished licentiate thesis, Ghent University 1990, 102–103.

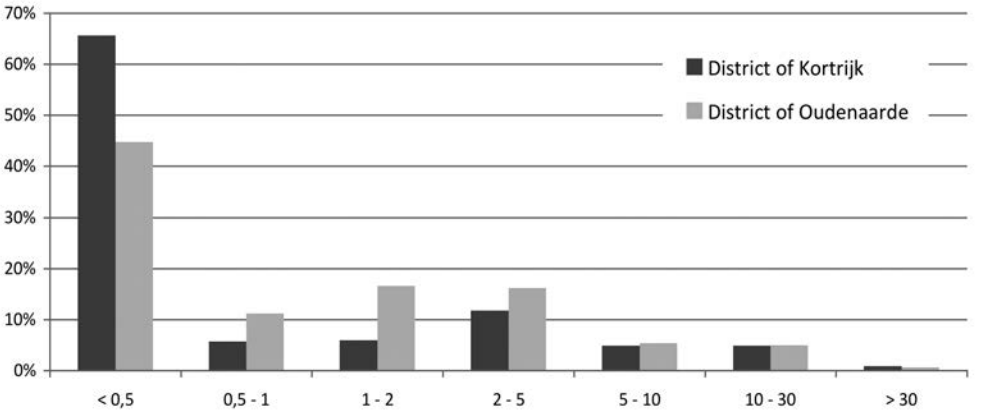
22 Ronsijn, Commerce and the countryside, 323–330.

23 Wouter Ronsijn/Eric Vanhaute, From the hungry 1840s to the dear 1850s: the case of Belgium's food price crisis, 1853–56, in: Agricultural History Review 66/2 (2018), 238–260; Pieter de Graef, The resilient urban peasant?, Paper presented at ESEH conference in Zagreb 2017; Phil Kint, Prometheus aangevuurd door Demeter. De economische ontwikkeling van de landbouw in Oost-Vlaanderen 1815–1850, Amsterdam 1989; Ronsijn, Commerce and the countryside; Jan Blomme, The economic development of Belgian agriculture: 1880–1980. A quantitative and qualitative Analysis, Leuven 1993.

24 Peter Stabel, Dwarfs among giants: the Flemish urban network in the late Middle Ages, Leuven 1997.

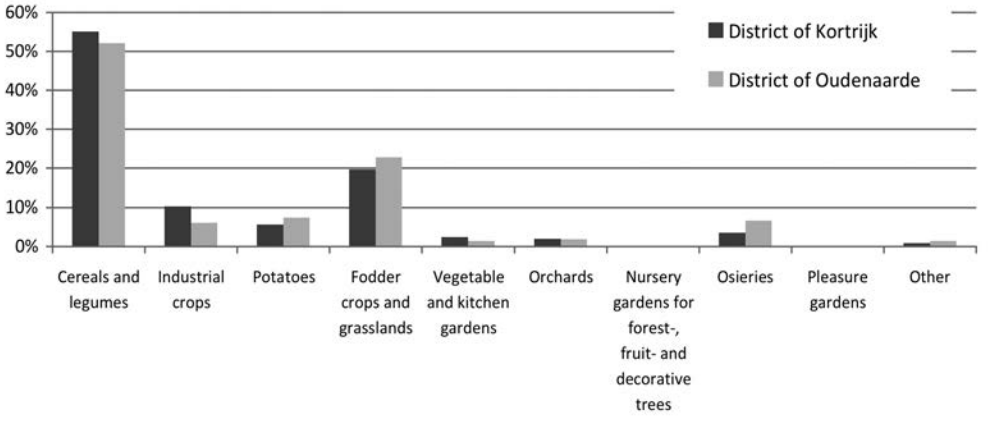
The countryside surrounding the towns of Oudenaarde and Kortrijk was structured by the smallholding economy of inland Flanders. This was characterised by a mass of smallholdings (rarely exceeding 2 hectares) alongside a small number of economically dominant large holdings (above 10 hectares). According to the 1846 agricultural census, about half of all holdings were smaller than 0.5 hectares (see Figure 3). All holdings conducted mixed farming, and households with smaller holdings also combined agrarian with non-agrarian activities (proto-industry). About 50 per cent of the area under cultivation in the countryside was used to produce cereals. The rest was devoted to fodder crops and grasslands (about 20

Figure 3: Distribution of holdings by size in the districts of Kortrijk and Oudenaarde, 1846



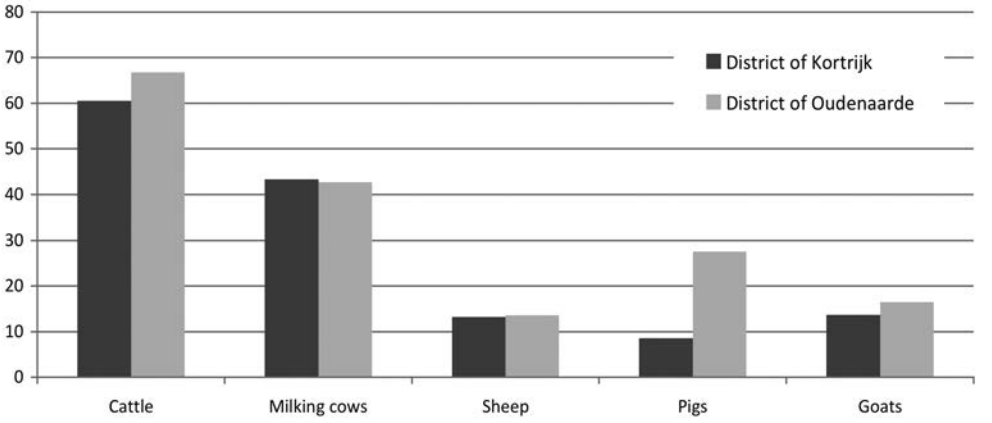
Source: LOKSTAT-POPPKAD (Historical Database of Local and Cadastral Statistics), Ghent University, Quetelet Center for Quantitative Historical Research (1846 agricultural census).

Figure 4: Agricultural production in the districts of Kortrijk and Oudenaarde, 1846 (distribution of crops over the total agricultural area)



Source: LOKSTAT-POPPKAD (1846 agricultural census).

Figure 5: Livestock in the districts of Kortrijk and Oudenaarde, 1846 (numbers of livestock per 100 hectares of agricultural land; "cattle" includes milking cows)



Source: LOKSTAT-POPPKAD (1846 agricultural census).

per cent), and industrial crops and potatoes (about 5 to 10 per cent each) (see Figure 4). Livestock mainly consisted of cattle (mostly milking cows), with the district of Oudenaarde also counting large numbers of pigs (see Figure 5).

The published agricultural census results for the towns of Oudenaarde and Kortrijk also include the inhabitants living in the territory within their jurisdiction outside the urban core. For this reason, they are not precise enough to inform us about urban farming specifically. However, for both towns we have sources permitting such a unique access to the household level. For Kortrijk, a local tax list from 1847 is available, indicating how much land, if any, each inhabitant cultivated. For Oudenaarde, there are the original, individual forms of the 1880 agricultural census, meticulously reporting the agricultural production of households in the town.[25] By linking these sources to the population registers of the towns in the respective years, we were able to determine the profession and place of residence of each head of household. It thus becomes possible to reveal which social groups were involved in food production, to find out the size of their holdings, the distribution of land between these various groups, their places of residence, and – for Oudenaarde in particular – look into social property relations, the type of crops they grew, and the type and number of animals they reared. Though the two micro-level case studies are approximately thirty years apart, the analyses for both cities reflect their 'rural economy' before the substantial change at the end of the nineteenth century.

There are 492 people on Kortrijk's 1847 tax list, a figure which is very close to the 544 holdings registered in the 1846 agricultural census. Of these 492 people, 342 (70 per cent) could

25 City Archives Kortrijk (further CAK), MSAK, no. 1026, Rôles pour le recouvrement de la taxe provinciale destinée à former une caisse d'assurance agricole 1847; City Archives Oudenaarde (further CAO), Modern archive, OUD 711:201.4-53 Landbouwtelling 1880, Persoonlijk Bulletijn (Bulletijn no. 1) and 711:201.4-54 Landbouwtelling 1880, Aanvullend bulletijn.

be identified in the population register with sufficient confidence. From Oudenaarde's 1880 agricultural census, we have the forms of 178 households. This is a much larger number than the 95 holdings recorded in the 1846 agricultural census. In the intervening years, the number of holdings undoubtedly rose, as much of the land initially covered by fortifications was converted into gardens in the 1860s. A large area of Oudenaarde had been taken up by military fortifications, which in 1834 covered 67 hectares.[26] Their subsequent removal greatly enlarged the urban open space. Given the town's demographic stagnation (the population dropped by about 10 per cent between 1856 and 1866[27]), and the consequent lack of demand for residential space, garden plots were created on a notable part of the newly available ground. Of the 178 households in the 1880 agricultural census, 133 (75 per cent) could be identified in the population register. Since the Belgian agricultural censuses in principle covered all holdings, even when they were very small and only used for household consumption, our data should provide us with an inclusive overview of holding sizes, cropping patterns, and livestock ratios. They also inform us about the population that did not cultivate a holding. In 1846, 88 per cent of all households in Kortrijk and 92 per cent of all households in Oudenaarde (including those living outside the urban core) did not have access to land for farming or home food growing. By 1880, the proportion of landless households in Oudenaarde had dropped slightly, to 86 per cent.[28]

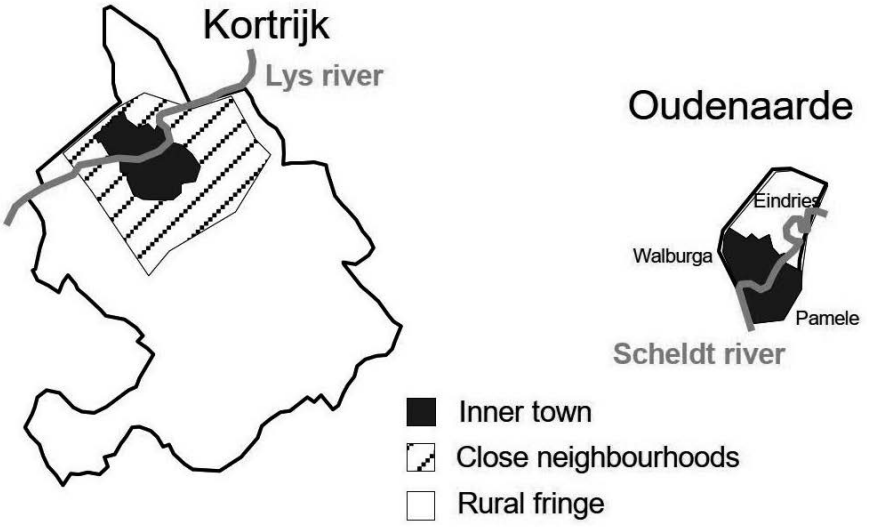
From the bird's-eye view that the published census results provide, our household-level data allow us to switch to a worm's-eye view of farming in an urban environment. By combining the tax and census data with population registers, we can consider different parts of the towns separately, depicted schematically in Figure 6. In Kortrijk, we distinguish the 'inner town' from the 'close neighbourhoods' (bordering the inner town) and the 'fringe zone' (not bordering the inner town). In Oudenaarde, there was only the inner town and the fringe (called the Eindries). The inner town of Oudenaarde was cut in half by the Scheldt river, separating the Walburga parish from the Pamele parish. Walburga was the administrative centre of the town, where the town hall and market square were located. This distinction we use to reveal how and to what extent urban farming differed from farming in the countryside.

26 Lucien de Smet, Steden van Zuid-Oostvlaanderen. III. Oudenaarde, in: Tijdschrift van de Belgische Vereniging voor Aardrijkskundige Studies 20 (1951), 133–164, 138–140; Stefaan Minnaert, De politieke dynastieën te Oudenaarde van 1815 tot 1914, unpublished licentiate thesis, Ghent University, 1974; Ministère des Finances (ed.), Statistique territoriale.

27 Wouter Ronsijn, Bevolkingscijfers voor Oudenaarde tijdens de 'lange' negentiende eeuw, in: Handelingen van de Geschied- en Oudheidkundige Kring van Oudenaarde 53 (2017), 103–120.

28 Ministère de l'Intérieur (ed.), Population. Recensement général (15 octobre 1846), Première partie, Bruxelles 1849, 31, 52; Ministère de l'Intérieur (ed.), Population. Recensement général (31 décembre 1880), Bruxelles 1884, 53; Ministère de l'Intérieur (ed.), Agriculture. Recensement général (15 octobre 1846), Tome II, Bruxelles 1850, 45, 345.

Figure 6: The different parts of Kortrijk and Oudenaarde

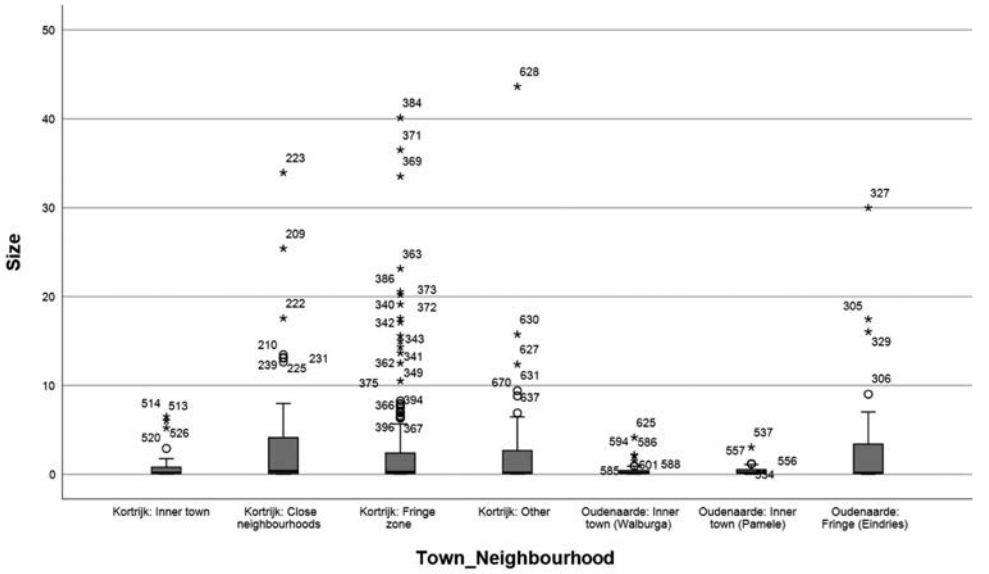


Source: Own map.

Access to land and holding structures in Kortrijk and Oudenaarde

In the previous section, we already made clear that only a very small minority in Oudenaarde and Kortrijk had access to land. In this section, we focus on how much land these people cultivated, and how this differed according to their location of residence and profession. In both Kortrijk and Oudenaarde, the size of holdings differed considerably according to whether the household lived in the inner town or in other parts, as shown in Figure 7 and Table 1. Households in the inner town had very small holdings: medians were between 0.15 and 0.20 hectares (ha). Three quarters of holdings were smaller than 0.80 ha in Kortrijk and smaller than 0.54 and 0.42 ha in Pamele and Walburga respectively. This is not necessarily due to available space being limited in the urban core of the towns, given that land cultivated by townsmen outside the town centre is also included in these figures. The largest holdings of people living in the inner cities of Oudenaarde and Kortrijk were between 3 ha (Pamele) and 6.5 ha (Kortrijk). Outside the urban core, many holdings were not much larger, but there was a significant minority of medium-sized and large holdings, which was absent in the inner cities. A quarter of all holdings exceeded 3.4 ha in the Eindries (Oudenaarde), 2.4 and 4.1 ha respectively in the fringe zone and the close neighbourhoods of Kortrijk. Between the close neighbourhoods and the fringe zone of Kortrijk there were no meaningful differences. This comparison shows a very sharp difference between the inner towns and the outskirts: farming activities of people living inside the towns were always small-scale; only outside the urban cores were there people farming on a larger scale.

Figure 7: Size of holdings (in ha) by neighbourhood in Kortrijk (1847) and Oudenaarde (1880). The category 'other' in Kortrijk refers to holdings whose location could not be classified.



Source: Oudenaarde: CAO, Modern archive, OUD 711:201.4-53 and 54; Kortrijk: CAK, MSAK, no. 1026.

Table 1: Size of holdings (in ha) by neighbourhood in Kortrijk (1847) and Oudenaarde (1880). The category 'other' in Kortrijk refers to holdings whose location could not be classified.

		N	Mean	Median	Percentile 25	Percentile 75	Maximum
Kortrijk	Inner town	21	1,24	0,18	0,09	0,80	6,50
	Close neighbourhoods	82	3,11	0,36	0,09	4,13	33,95
	Fringe zone	182	2,92	0,27	0,09	2,39	40,12
	Other	45	2,98	0,18	0,09	2,68	43,63
Oudenaarde	Fringe (Eindries)	41	2,86	0,17	0,08	3,41	29,99
	Inner town (Pamele)	34	0,42	0,20	0,13	0,54	3,05
	Inner town (Walburga)	58	0,39	0,15	0,08	0,42	4,15

Source: Oudenaarde: CAO, Modern archive, OUD 711:201.4-53 and 54; Kortrijk: CAK, MSAK, no. 1026.

Using the population registers, we can identify who cultivated these fields and see if the size of holdings differed by occupational group.[29] This is shown in Tables 2 and 3. The population that was professionally involved in agriculture, i.e. reporting 'cultivator' or 'gardener' as profession, was rather small: 93 households in Kortrijk, and only 25 in Oudenaarde (leaving aside households with unknown professions). It is quite remarkable that only two heads of household had the officials register 'gardener' as their profession in Oudenaarde, though four designated as 'cultivators' in the registers only grew vegetables, so in practice they were gardeners as well. Besides the groups professionally involved in food production, in both towns there were also artisans with land, as well as textile workers in Kortrijk and innkeepers in Oudenaarde. Many other professional groups were also represented, but in rather small numbers.

Linking occupation with holding size reveals striking differences between the urban cores and the rest of the jurisdictions of Oudenaarde and Kortrijk. Cultivators quite obviously dominated the rural areas: they had the largest holdings and by far the largest share in the total area under cultivation. The median cultivator outside the town centres held about 4 ha in both towns. Still, people with very small holdings sometimes also called themselves cultivators, especially in the rural part of Oudenaarde: there, a quarter of all cultivators held less than 1.1 ha. In total, cultivators occupied between 70 and 90 per cent of the area under cultivation. Gardeners in general had smaller holdings, with median values ranging between 0.09 and 1.4 ha.

In contrast to Oudenaarde, the Kortrijk tax list also shows greengrocers combining retail activities with obviously commercial agriculture. Though the size of their holdings varied widely, one of them cultivated a holding larger than 5 ha. There was no significant difference between gardeners and greengrocers in the size of their holdings. These greengrocers seem to have been gardeners, often with substantial holdings, cutting out the middle man and selling their output or part of it directly. In Oudenaarde, there were no greengrocers in the agricultural census.

Other occupational groups also had access to land in the rural areas near Oudenaarde and Kortrijk, but they mostly had small holdings rarely exceeding 1 ha. Among the exceptions were agricultural labourers, directly linked through labour and credit markets to the professional farming circuit. In general, they had access to more land than any other families involved in artisanal production or factory work. The five farm servants using land in Kortrijk, for instance, tended to have substantial holdings, with a median of 5.2 ha. Several of these were registered at the same address as the large farmers who employed them, and may have obtained access to their holdings (or part of them) as part of a reciprocal exchange relation with their employers; similar arrangements are known from eighteenth-century service contracts in rural inland Flanders.[30] Some families involved in producing or processing textiles also had access to a larger amount of land. Two linen bleachers in Oudenaarde, living in

29 The categorisation of occupational groups is based on the professions declared by respondents in the population register. These were not necessarily the exclusive occupations of these people, but can be considered as their main professions.

30 Thijs Lambrecht, Unmarried adolescents and filial assistance in eighteenth-century rural Flanders, in: Georg Fertig (ed.), Social networks, political institutions and rural societies (Rural History in Europe 11), Turnhout 2015, 63–88, 73. Compare to the English large tenants offering their farm labourers a small allotment as part of their remuneration: Jeremy Burchardt, The allotment movement in England, 1793–1873, Martlesham 2002.

the Eindries, farmed 2.6 and 3.1 ha respectively. Some outliers in the group of textile workers in Kortrijk also cultivated more than 1 ha like their Oudenaarde colleagues. These groups correspond to the typical peasant household found elsewhere in inland Flanders, working a small farm and combining agriculture with 'proto-industrial' activities.[31] All this indicates that the rural areas near the two towns differed little from the surrounding countryside.

A very different picture appears when we look at the town centres, at the occupational profile of people living there who cultivated land. Here, there were almost no heads of household identifying themselves as farmers. The number of gardeners was likewise small, although two lived in the centre of Kortrijk, cultivating more than 6 ha each, which was almost half of the total area used by inhabitants of the centre. The rest of the agricultural land was divided among artisans in both towns, as well as textile workers in Kortrijk, and merchants and people active in services in Oudenaarde. These people, many of them belonging to what may be broadly termed the working class, usually had only a very small backyard garden. Their plots typically ranged between 0.15 and 0.5 ha. Compared to the total town population, only few urban households had access to a plot of land, but together, these groups still held a significant share of the agricultural area within town centres.

A corresponding difference between the rural areas and the urban cores of Oudenaarde and Kortrijk appears when we look at the distribution of holdings by size. In the rural areas, a minority of larger holdings (10 ha or above) occupied between 50 and 60 per cent of the land. In the urban cores, smaller holdings had a much larger share, although there is a notable difference between Kortrijk and Oudenaarde. In Kortrijk, medium-sized holdings (between 5 and 10 ha) made up most of the cultivated land, due for the most part to the two gardeners with large holdings. The numerical majority of holdings were small, but these added up to only a minor part of the land. In the centre of Oudenaarde, a larger share of the land was divided between the many smallholdings. This is especially notable in the Walburga parish, where more than a third of the land was tilled by people with less than 0.5 ha. This reflects the comparative rarity of holdings with more than 0.5 ha; despite their small numbers, these holdings still occupied a notable part of the land. In other words, land was distributed unequally in all locations (the rural areas and urban cores), but how this inequality manifested differs by location.

31 Cf. Erik Thoen, A 'commercial survival economy' in evolution. The Flemish countryside and the transition to capitalism (Middle Ages–19th century), in: Peter Hoppenbrouwers/Jan Luiten van Zanden (eds.), Peasants into farmers? The transformation of rural economy and society in the Low Countries (middle ages–19th century) in light of the Brenner debate (CORN publications series. Comparative rural history of the North Sea area 4), Turnhout 2001, 102–157.

Table 2: Land cultivated by households with known profession and location in Kortrijk (1847)

Profession of head of household and size of holdings	N of holdings			Size of holdings (ha)												Share of land		
	Inner town	Close neighbourhoods	Fringe zone	Inner town				Close neighbourhoods				Fringe zone				Inner town	Close neighbourhoods	Fringe zone
	N	N	N	Mean	Median	Q1	Q3	Mean	Median	Q1	Q3	Mean	Median	Q1	Q3	%	%	%
Cultivator	0	25	59					7,32	4,39	2,16	7,10	7,89	3,86	2,20	10,51	0	72	88
Gardener	2	3	4	6,27	6,27	6,03	6,50	0,21	0,09	0,08	0,45	1,22	1,40	0,66	1,77	48	0	1
Servant	0	1	5					0,07	0,07	0,07	0,07	4,02	5,20	1,14	6,46	0	0	4
Day labourer	2	4	18	0,20	0,20	0,18	0,22	4,14	1,51	0,13	8,15	0,13	0,10	0,09	0,18	2	7	0
Food processing	1	3	8	0,09	0,09	0,09	0,09	1,67	0,61	0,27	4,13	0,18	0,15	0,09	0,26	0	2	0
Textile worker	6	8	29	1,00	0,16	0,08	0,31	2,44	0,98	0,11	5,62	0,46	0,13	0,09	0,27	23	8	2
Factory worker	1	2	9	0,18	0,18	0,18	0,18	0,09	0,09	0,09	0,09	0,20	0,13	0,09	0,18	1	0	0
Innkeeper	0	1	4					0,13	0,13	0,13	0,13	0,87	0,84	0,22	1,51	0	0	1
Artisan/Artisan apprentice	4	12	15	1,26	0,97	0,17	2,35	0,77	0,09	0,07	0,16	0,62	0,18	0,09	0,27	19	4	2
Shopkeeper	2	1	0	0,13	0,13	0,09	0,18	0,03	0,03	0,03	0,03					1	0	0
Services	1	5	4	0,80	0,80	0,80	0,80	0,10	0,09	0,09	0,13	0,16	0,16	0,13	0,19	3	0	0
Rentier or private person	1	3	2	0,62	0,62	0,62	0,62	0,82	0,18	0,18	2,11	1,06	1,06	0,13	2,00	2	1	0
No profession	0	5	18					0,18	0,09	0,09	0,12	0,16	0,10	0,09	0,18	0	0	1
Merchant	1	1	2	0,09	0,09	0,09	0,09	7,97	7,97	7,97	7,97	0,96	0,96	0,18	1,74	0	3	0
Military/Police/Civil servant	0	1	1					0,09	0,09	0,09	0,09	0,58	0,58	0,58	0,58	0	0	0
Green grocer	0	3	1					2,51	1,56	0,71	5,27	0,62	0,62	0,62	0,62	0	3	0
Other	0	4	3					0,18	0,18	0,14	0,22	0,12	0,09	0,09	0,18	0	0	0
0 – 0.5 ha	14	42	103	0,15	0,17	0,09	0,18	0,12	0,09	0,09	0,14	0,15	0,13	0,09	0,18	8	2	3
0.5 – 1 ha	2	3	6	0,71	0,71	0,62	0,80	0,61	0,61	0,52	0,71	0,63	0,63	0,58	0,70	5	1	1
1 – 2.5 ha	1	9	29	1,77	1,77	1,77	1,77	1,75	1,79	1,56	2,11	1,72	1,74	1,33	1,98	7	6	9
2.5 – 5 ha	1	10	14	2,92	2,92	2,92	2,92	3,45	3,10	2,79	4,13	3,65	3,68	3,27	3,90	11	14	10
5 – 10 ha	3	11	15	5,92	6,03	5,23	6,50	6,19	5,90	5,67	6,94	6,78	6,92	6,32	7,53	68	27	19
10 – 30 ha	0	6	12					15,88	13,30	13,08	17,56	16,61	16,36	14,00	19,68	0	37	38
> 30 ha	0	1	3					33,95	33,95	33,95	33,95	36,72	36,50	33,53	40,12	0	13	21

Source: CAK, MSAK, no. 1026.

Table 3: Land cultivated by households with known profession and location in Oudenaarde (1880)

Profession of head of household and size of holdings	N of holdings			Size of holdings (ha)												Share of land		
	Pamele	Walburga	Eindries	Pamele				Walburga				Eindries				Pamele	Walburga	Eindries
	N	N	N	Mean	Median	Q1	Q3	Mean	Median	Q1	Q3	Mean	Median	Q1	Q3	%	%	%
Cultivator	3	5	15	0,50	0,33	0,08	1,10	1,11	0,93	0,92	1,51	7,21	4,34	1,12	9,02	11	25	92
Gardener	1	0	1	1,17	1,17	1,17	1,17					0,75	0,75	0,75	0,75	8	0	1
Servant	0	0	1									0,08	0,08	0,08	0,08	0	0	0
Day labourer	1	0	3	0,69	0,69	0,69	0,69					0,26	0,06	0,05	0,66	5	0	1
Food processing	0	0	0													0	0	0
Textile worker	0	0	3									1,88	2,56	0,02	3,06	0	0	5
(Factory) Worker	0	1	1					0,06	0,06	0,06	0,06	0,11	0,11	0,11	0,11	0	0	0
Innkeeper	3	8	3	0,17	0,23	0,03	0,25	0,13	0,13	0,08	0,17	0,11	0,10	0,07	0,17	4	4	0
Artisan/Artisan apprentice	10	14	9	0,24	0,20	0,15	0,21	0,61	0,15	0,08	0,42	0,07	0,08	0,06	0,09	17	38	1
Shopkeeper	2	1	0	0,26	0,26	0,22	0,30	0,08	0,08	0,08	0,08					4	0	0
Services	7	2	3	0,32	0,13	0,06	0,54	0,17	0,17	0,08	0,26	0,19	0,14	0,10	0,33	16	2	0
Rentier or private person	1	6	0	0,13	0,13	0,13	0,13	0,21	0,21	0,11	0,23					1	5	0
No profession	0	4	0					0,21	0,10	0,07	0,35					0	4	0
Merchant	4	4	2	0,93	0,25	0,17	1,69	0,23	0,14	0,13	0,32	0,16	0,16	0,03	0,29	26	4	0
Legal & administrative professions	2	7	0	0,64	0,64	0,08	1,20	0,34	0,28	0,10	0,49					9	11	0
Other	0	3	0					0,13	0,13	0,05	0,20					0	2	0
Entrepreneur	0	3	0					0,44	0,50	0,18	0,65					0	6	0
0 – 0.5 ha	25	48	23	0,16	0,18	0,08	0,21	0,17	0,13	0,08	0,20	0,10	0,08	0,06	0,13	29	36	2
0.5 – 1 ha	4	6	4	0,59	0,57	0,56	0,63	0,76	0,79	0,58	0,93	0,75	0,71	0,66	0,84	17	20	3
1 – 2.5 ha	4	3	1	1,16	1,17	1,14	1,19	1,94	2,11	1,51	2,19	1,12	1,12	1,12	1,12	33	26	1
2.5 – 5 ha	1	1	7	3,05	3,05	3,05	3,05	4,15	4,15	4,15	4,15	3,67	3,64	3,06	4,34	22	18	22
5 – 10 ha	0	0	3									7,23	7,01	5,67	9,02	0	0	18
10 – 30 ha	0	0	3									21,17	17,47	16,04	29,99	0	0	54
> 30 ha	0	0	0													0	0	0

Source: CAO, Modern archive, OUD 711:201.4-53 and 54.

The agricultural census forms of Oudenaarde allow us to get a glimpse of the social property relations, i.e. whether people leased or owned the land they cultivated (Table 4). As with the figures on farm size and land distribution, the rural part of the town (Eindries) closely followed the patterns of the surrounding countryside, with almost all of the land held in leasehold (over 90 per cent).[32] Relations between landowner and tenant in this rural fringe zone most probably had paternalistic characteristics and were part of local credit networks, just as in the smallholding commercial subsistence economy of inland Flanders.[33] (The Kortrijk tax list hints at a comparable relation between the textile workers and commercially involved urban farmers there.) Similar proportions were found in the Pamele parish, but in the administrative centre of the town, Walburga parish, people owned more than half of the land they cultivated. Relations between proprietors and tenant households in these inner parts of the town that engaged in home food growing will most likely have been different from the ones in which the professional farming and gardening circuit of the fringe zone was involved. Probably, these tenant households rented a house with a (backyard) garden from a proprietor active on the urban housing market; the income strategy of such owners might differ from that of landowners in the countryside. Unfortunately, the census data do not permit us to uncover these differences in tenant-owner relations between the commercially involved urban farmers and the families engaged in home food provisioning.

In addition to holding structures, we are also informed about the location of the cultivated plots: whether they were inside or outside the municipality, including both the inner town and its rural fringe (Table 4). People living in the inner town rarely cultivated land located outside the municipality, though their holdings may have been in the rural fringe. In contrast, over 40 per cent of the land worked by people living in the rural fringe was located in other municipalities, most of it in the two adjoining ones of Bevere and Eine.

Table 4: Access to land by neighbourhood in Oudenaarde, 1880

	Fringe (Eindries)	Inner town (Pamele)	Inner town (Walburga)
Percentage of land held in ownership / leasehold	8 / 92	17 / 83	55 / 45
Percentage of cultivated land located outside the municipality of Oudenaarde	42	10	11

Source: CAO, Modern archive, OUD 711:201.4-53 and 54.

32 Compare to observations of the dominance of leasehold in the surrounding countryside: Eric Vanhaute, Rich agriculture and poor farmers: land, landlords and farmers in Flanders in the eighteenth and nineteenth centuries, in: Rural History 12/1 (2001), 19–40, 25.

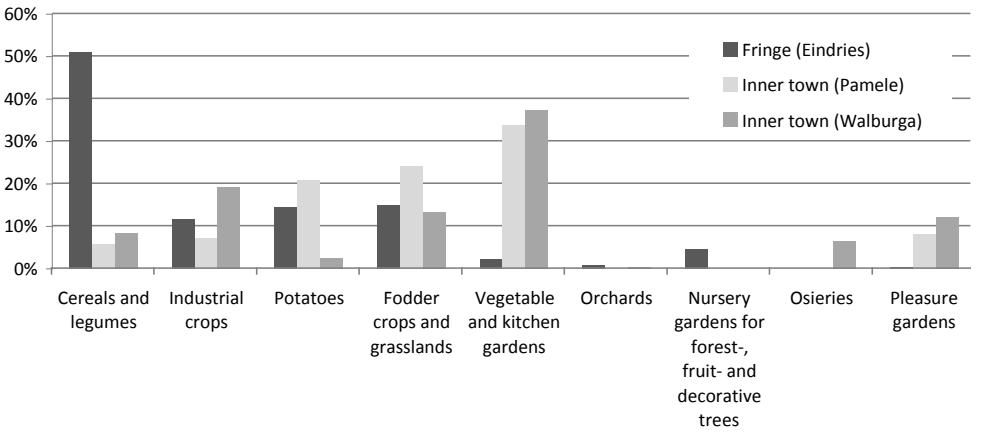
33 Cf. Paul Brusse et al., The Low Countries, 1750–2000, in: Van Bavel/Hoyle (eds.), Social relations, 199–224, 203–205.

Cropping schemes of commercial urban farmers and households with home food gardens in Oudenaarde

The Oudenaarde census forms reveal a sharp difference between the inner town and the rural fringe not only in terms of holding structures, but also of production strategies. Figure 8 shows what was grown on holdings in the different parts of Oudenaarde. People farming outside the town centre grew what other rural households did as well: mainly cereals (50 per cent of the cultivated area), complemented with industrial crops, potatoes, and fodder or grasslands (about 15 per cent each). In contrast, people living within the town, where mostly small garden plots were found, primarily grew vegetables and herbs (about 35 per cent). In Pamele parish, they also devoted a substantial share to potatoes (about 20 per cent), although potatoes were undoubtedly grown in the vegetable gardens of Walburga as well. In addition, the inner town numbered more pleasure gardens (about 10 per cent).

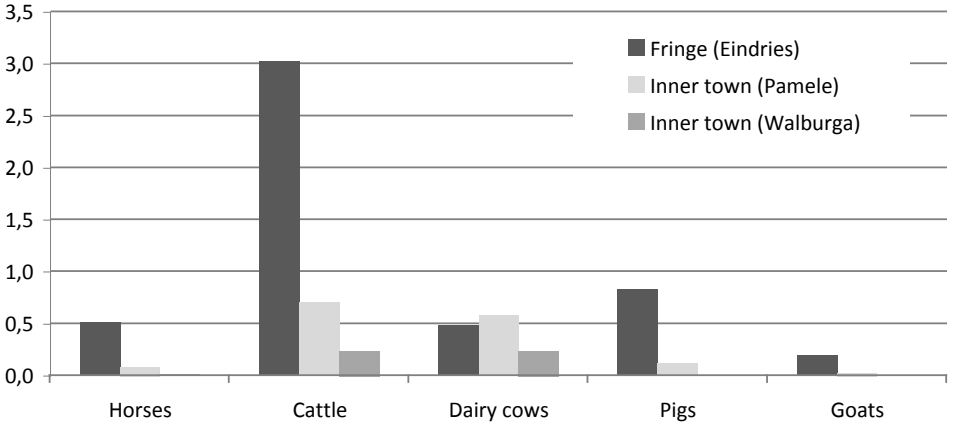
The data on livestock in Figure 9 show that hardly any animals were kept for agricultural purposes by people living within the town walls. Strikingly, dairy cows figure most prominently of all farm animals in the town centre. In relative terms, as many dairy cows were kept per holding by people living in Pamele as by people living in the rural part of the town, and half as many by people living in Walburga. However, only a minority of all holdings included dairy cows regardless of location (the proportion being highest in Pamele: 7 out of 34 holdings), but when they did, the number of dairy cows differed little between neighbourhoods.

Figure 8: Agricultural production in Oudenaarde, 1880, by neighbourhood (distribution of crops over the total agricultural area)



Source: CAO, Modern archive, OUD 711:201.4-53 and 54.

Figure 9: Livestock in Oudenaarde, 1880, by neighbourhood (average number of livestock per holding; "cattle" includes dairy cows)



Source: CAO, Modern archive, OUD 711:201.4-53 and 54.

Looking at the occupational groups to which these people belonged (Table 5) again reveals a clear difference between rural and urban production strategies. Households professionally engaged in farming (cultivators and gardeners), as well as textile workers, devoted up to 50 per cent of their acreage to cereals, complemented with potatoes, fodder crops and grasslands. Most of these lived in the rural fringe (19 out of 28). Even gardeners, with smaller holdings than cultivators, did not fully specialise in horticultural production and still used 20 per cent of their land for cereals. Conversely, those few self-identified cultivators who lived within the town walls (8 out of 23 in this occupational category) did not produce cereals, but devoted their entire acreage to potatoes, vegetables and fodder crops, whereas the one gardener living within the town walls did grow oats. There was one holding in the Eindries that devoted 72 per cent of its 5.6 ha to growing forest, fruit or decorative trees. Finally, most of the livestock (horses, cattle, and pigs) was kept by cultivators living in the Eindries. With an average of 7.6 cattle (of which only 1.1 dairy cows) and 2 pigs per holding, meat production seems to have been an important part of agriculture in the Eindries, although relative to the area under cultivation these numbers are no different from those in the rest of the district.

Other occupational groups consisted mainly of households with small backyard gardens of less than 0.5 ha, both within the town walls and in the rural fringe. They devoted most of their tiny plots to high-yielding crops, such as potatoes and vegetables, up to 70 and 80 per cent of their available surface area. In the Eindries and Pamele, these households used their land for potatoes and vegetables, whereas in Walburga potato plots were all but absent. Households in the latter parish did have vegetable gardens, as well as pleasure gardens. These last can be linked to what may be seen as the 'leisure class': people living off rents or declaring no profession; besides them, people in legal or administrative professions and merchants also tended to have pleasure gardens. Yet altogether, these surfaces in the urban core were very small. If households in these occupational categories kept animals, they were almost exclusively dairy cows. The fact that some of them (a small cultivator, a day labourer, an artisan, an entrepreneur, and two people active in services professions) had less than 1 ha at their disposal while

keeping one or even two cows might seem unusual.[34] These households had too little space to produce fodder or keep meadows (which they did not, or only to a small extent), so other paths must have been followed, such as letting their cows graze on the town common.[35] This might explain the presence of some cattle in the inner town of Oudenaarde. In Kortrijk, according to a livestock census of 1840, eleven households located in Kortrijk-Binnen (the inner town) held 35 cows out of a total of 919 cows on Kortrijk's territory (including the close neighbourhoods and the fringe zone), meaning that only a tiny fraction (3.8 per cent) of all cows were stabled in the inner town.[36] Pig keeping in Oudenaarde was related to the professional farming circuit: only a few households from other occupational groups kept pigs, and two of those groups (day labourers and textile-processing urban peasant households) were themselves closely linked to the farming circuit. Unfortunately, small livestock, such as poultry, was not counted in the 1880 agricultural census, but we have an indication for 1844 that people living inside the walls raised poultry and even sold it in the market.[37]

To summarise, indications for a Thünen-like specialisation model linking crop choice or livestock numbers with the distance to the urban centre and transportation costs seem very faint. Farming in the rural fringe of Oudenaarde was not notably different from farming in the rest of the district. Only people living within the town walls, who probably faced more competition for urban open space, focused on high-yielding potatoes and vegetables. The question remains whether or not this focus was motivated by commercial considerations.

34 On the ability to maintain cows on smallholding farms, see Jean-Marc Moriceau, Histoire et géographie de l'élevage français, du Moyen Âge à la Révolution, Paris 2005, chapter 11.

35 Henry French, Urban agriculture, commons and commoners in the seventeenth and eighteenth centuries: the case of Sudbury, Suffolk, in: Agricultural History Review 48/2 (2000), 171–199; CAO, Modern Archive, 723.0-1 Donkmeers 1834.

36 CAK, MSAK, no. 5706 Stukken i.v.m. de telling van paarden en hoornvee 1840–1867. Of these 35 cows, 25 were held by a single person specialising in this trade, who presumably had access to meadows and arable land in the close neighbourhoods and rural fringe of Kortrijk.

37 CAO, Modern archive, Deliberations of the municipal council: 16 Nov. 1844, 7 Dec. 1844.

Table 5: Arable production (ha) and livestock (heads) by occupational category and neighbourhood in Oudenaarde, 1880

	N	Cereals and legumes	Industrial crops	Potatoes	Fodder crops and grasslands	Vegetable and kitchen gardens	Orchards	Nursery gardens for forest-, fruit- and decorative trees	Osieries	Pleasure gardens	Total (ha)	Horses	Cattle	Dairy cows	Pigs	Sheep	Goats
Rural fringe (Eindries)																	
Cultivator	15	56,28	13,44	13,77	14,90	1,68	1,07	5,19			106,33	20	114	16	30		2
Gardener	1	0,20		0,18		0,37					0,75						
Servant	1			0,06		0,02					0,08						
Day labourer	3		0,01	0,61	0,19	0,04					0,85				2		2
Textile worker	3	2,45	0,01	1,20	1,96	0,02					5,64	1	8	2	2		
(Factory)Worker	1			0,06		0,05					0,11						
Innkeeper	3	0,05		0,16		0,13					0,34						
Artisan/Artisan apprentice	9		0,01	0,39		0,26					0,66						2
Services	3	0,12	0,01	0,26	0,13	0,05					0,57		2	2			2
Merchant	2					0,03				0,29	0,32						
Inner town (Pamele)																	
Cultivator	3			0,17	0,82	0,26					1,25		4	4			
Gardener	1	0,17		0,51	0,47	0,02					1,17		3	3			
Day labourer	1			0,17	0,41	0,11					0,69		2	2			
Innkeeper	3			0,16		0,35					0,51						1
Artisan/Artisan apprentice	10					1,67				0,68	2,35						
Shopkeeper	2	0,05		0,20	0,05	0,22					0,52					2	
Services	7			0,21	0,53	0,87					1,61		4	4			
Rentier or private person	1					0,13					0,13						
Merchant	4	0,54	0,62	1,10	0,76	0,36				0,32	3,70	2	9	5	2		
Legal & adm. professions	2		0,33	0,23	0,16	0,48				0,08	1,28	1	2	2	2		
Inner town (Walburga)																	
Cultivator	5			0,52	1,28	1,82					3,62		8	8			
(Factory)Worker	1					0,06					0,06						
Innkeeper	8					0,80				0,20	1,00						
Artisan/Artisan apprentice	14	1,22	3,97		0,37	1,37			1,35	0,21	8,49	1	5	5			

Shopkeeper	1			0,08			0,08			
Services	2			0,34			0,34			
Rentier or private person	6	0,42		0,06		0,76	1,24			
No profession	4			0,54		0,30	0,84			
Merchant	4		0,46	0,44			0,90			
Other	3			0,28		0,10	0,38			
Entrepreneur	3	0,10	0,65	0,30	0,10	0,18	1,33	1	1	
Legal & adm. professions	7			1,65		0,75	2,40			

Source: CAO, Modern archive, OUD 711:201.4-53 and 54.

When food supply meets demand at the household level

In order to evaluate at what point urban households involved in either kind of food production reached self-sufficiency and were able to start commercialising their products, we compare household-level output data with household consumption needs. Whereas previous studies of (peri-)urban agriculture were only able to evaluate self-sufficiency rates at the macro-level of urban territories,[38] our worm's-eye view permits us to do this at the household level. We can thus evaluate to what extent access to a plot of land helped urban dwellers to meet their food needs, and perhaps even enabled them to commercialise different kinds of crops. Thanks to the extraordinary detail on cropping patterns in the Oudenaarde censuses, we can estimate output figures at the household level using average crop yields for this period,[39] and compare these outputs with estimated consumption needs, based on the number of household members and on average consumption figures in Belgian cities.[40]

38 E.g. calculation of self-sufficiency levels of urban grain production in Sweden: Annika Björklund, Historical urban agriculture. Food production and access to land in Swedish towns before 1900 (Acta Universitatis Stockholmiensis. Stockholm Studies in Human Geography 20), Stockholm 2010, 101–154. Self-sufficiency of peri-urban cereal farming in the province of Barcelona in the nineteenth century: Marc Badia-Miró/Enric Tello, Vine-growing in Catalonia: the main agricultural change underlying the earliest industrialization in mediterranean Europe (1720–1939), in: European Review of Economic History 18/2 (2014), 203–226, 211.

39 We used the five-year mean (1878–1882) of Gadisseur's estimations of crop yields for East Flanders: 24.13 hl/ha of wheat, 25.99 hl/ha of rye, and 185.99 hl/ha of potatoes, Jean Gadisseur, Le produit physique de la Belgique, 1830–1913. Présentation critique des données statistiques, Brussels 1990, 406–407, 414–415, 418–419.

40 Our reconstruction of food demand is based upon the figures of Blomme, The economic development, 78, 87. In the period 1877–1880, estimations of wheat, rye, and potato consumption were set at 1.73, 0.94, and 2.85 hl per year respectively. We assume similar consumption levels in Oudenaarde as in other cities in accordance with the comparison between Ghent and Antwerp by Catharina Lis/Hugo Soly, Food consumption in Antwerp between 1807 and 1859: a contribution to the standard of living debate, in: The Economic History Review 30/3 (1977), 460–486, 481. However, regional variation might have existed as argued by Chris Vandenbroeke, La culture de la pomme de terre en Belgique (XVII^{e}–XIX^{e} siècles), in: Plantes et cultures nouvelles en Europe occidentale au Moyen Age et à l'époque moderne (Douzièmes journées internationales d'histoire du centre culturel de l'Abbaye de Flaran, 11–13 septembre 1990), Auch 1992, 115–129, 120–122, 126–128; see also Peter Scholliers, Arm en rijk aan tafel: tweehonderd jaar eetcultuur in België, Berchem 1993, 25.

The results are shown in Table 6. We consider bread grains (wheat and rye) first. None of the people living in the inner town grew these, only people in the rural fringe did. The (semi-) professional urban farmers easily met their own consumption needs in most cases, and quite logically had much of their cereal output left to commercialise. Since our consumption figures reflect an urban food basket privileging wheat over rye, whereas in reality rye consumption would have prevailed among the cultivators and gardeners growing cereals in the rural fringe area of the Eindries,[41] our limit for self-sufficiency in wheat is set too high and that for rye somewhat underestimated. However, we can conclude that cultivators usually met their consumption needs and that cereal producers were, on average, able to commercialise about 40 per cent of their wheat and rye output. As in the surrounding smallholding agriculture of inland Flanders, the size of the farm was decisive for the extent of commercialisation, with a one-hectare holding as the cut-off point.[42] Households with less than half a hectare had too little space to incorporate cereals into their rotation; those cultivating between 0.5 and 1 ha could produce enough rye to meet up to three quarters of their own needs. Above 1 ha the average amount of marketable output rose in proportion to farm size: a quarter of the output in the category from 1 to 2.5 ha, a third on farms with 2.5 to 5 ha, 80 per cent in the 5 to 10 ha group, and up to 88 per cent on the largest farms.

Potatoes and vegetables were much more economical to produce on smallholdings and in backyard gardens, because of their high yields and, for vegetables, the possibility of multiple harvests per year.[43] However, it is more difficult to reconstruct production figures for vegetables than for potatoes, as we lack information on the types of vegetables that were grown, the frequency of harvests, and the yields per surface area. Therefore, we estimate consumption needs using Gadisseur's observation that a garden plot of 0.03 ha was sufficient to provide a family of five with enough vegetables for one year. We compare this to the size of actual garden plots to assess whether self-sufficiency was reached and commercialisation or sharing was possible.[44]

Potatoes and vegetables were grown both by inhabitants of the inner town and by people living in the urban fringe. However, the inhabitants of the inner town appear to have been more successful in terms of self-sufficiency. Nearly all the households living there and cultivating potatoes and vegetables, regardless of occupational category, grew more than they theoretically needed. These people could produce enough to meet the food demand of their families and ease their household budgets. Ironically, the only person who did not grow

41 Cf. Jan de Vries, The production and consumption of wheat in the Netherlands, with special reference to Zeeland in 1789, in: Herman Diederiks/Jan Thomas Lindblad/Boudien de Vries (red.), Het platteland in een verarenderende wereld. Boeren en het process van modernisering, Hilversum 1994, 199–219, 200–202. For Kortrijk, an 1822 inquiry illustrates the dominance of wheat over rye consumption within the town walls (a nine to one proportion) vis-à-vis the rural outskirts (slightly less than a fifty-fifty proportion): CAK, MSAK, no. 1025.

42 Thoen, A 'commercial survival economy', 111; Pieter de Graef, Mesthoop doet leven? Stadsmest en een beter bemestingspatroon in de achttiende-eeuwse Vlaamse landbouw, in: Tijdschrift voor sociale en economische geschiedenis 14/1 (2017), 37–68, 55–63.

43 Vandenbroeke, La culture de la pomme de terre; Michel Oris/Muriel Neven/George Alter, Individuals and communities facing economic stress: a comparison of two rural areas in nineteenth-century Belgium, in: Robert C. Allen/Tommy Bengtsson/Martin Dribe (eds.), Living standards in the past. New perspectives on well-being in Asia and Europe, Oxford 2005, 373–401, 375; Gadisseur, Le produit physique, 540; Kint, Prometheus, 258.

44 The degree of commercialisation was hence calculated as follows: (Output – Consumption)/Output = (size of the garden plot – 0.03*(number of family members/5))/size of the garden plot; Gadisseur, Le produit physique, 540; similar estimation by Stanhill, An urban agro-ecosystem, 277.

enough vegetables identified himself as a gardener. In contrast, in the rural fringe, surprisingly many households grew insufficient amounts of potatoes and, to a lesser extent, of vegetables.

If we consider the figures by occupational groups, we see that the vast majority of cultivators were able to sell more than 65 per cent of their potato output, but also produced barely enough vegetables. The one gardener in the urban fringe was able to sell almost his entire harvest of potatoes and vegetables. A similar picture appears when we focus on the sizes of holdings. In the inner town, even the smallest holdings produced more than enough to cover household needs, whereas the opposite was the case in the rural fringe. Yet we should take these estimations with a large pinch of salt, because vegetable gardens most probably consisted not only of vegetables but also included a substantial share of potatoes, which were hence not reported as separate crops in the census responses.[45] Thus, our calculations might be overestimations. Still, our results indicate that the minority of households having the possibility to grow their own food could reach quite high levels of vegetable production, a part of which they were able to share with neighbours or to sell in the market.

In general, the percentage of output available for sale increased with the size of the holding. The largest farms could sell almost their entire potato harvest, but only half of the vegetable harvest. While larger farms devoted a lesser percentage of their arable land to potatoes, in absolute terms the acreage was still larger than that of the smallholdings and backyard gardens.[46] For vegetables, in contrast to potatoes, farm size seemed to play a far less important role: the absolute area under vegetables did not increase with the size of the farms.[47] Quite surprisingly, the other social groups, cultivating the tiniest of holdings, were according to the estimations able to commercialise a substantial amount of their output. The best option for smallholding cultivators and gardeners was to devote less acreage to cereals or even to abandon them altogether, and to grow high-yielding potatoes and labour-intensive vegetables on most of their land. Larger farmers, instead, did not and probably could not apply the required labour power for large-scale vegetable production, and thus stuck to cereal and potato cultivation – at least before the effects of the Agricultural Invasion, the rapid expansion of foreign grain imports, were felt in Europe in the last quarter of the nineteenth century.[48] The size of the urban population and the extent of the rural fringe are of paramount importance in this. The more crowded a town, the more competition the (semi-)professional urban agricultural sector experienced from the industry and housing sectors for urban open space. The resulting fragmentation of holdings subsequently influenced what crops the commercially involved urban farmers were able to grow.[49]

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45 Cf. Kint, Prometheus, 49–53, 258–260.

46 Mean percentage of land devoted to potatoes: 0–0.5 ha = 68.4; 0.5–1 ha = 31.7; 1–2.5 ha = 24.9; 2.5–5 ha = 19.6; 5–10 ha = 12.3; 10–30 ha = 11.3; mean number of hectares of potatoes per exploitation: 0–0.5 ha = 0.09; 0.5–1 ha = 0.24; 1–2.5 ha = 0.31; 2.5–5 = 0.66; 5–10 ha = 0.9; 10–30 ha = 2.37; database Oudenaarde.

47 Mean percentage of land devoted to vegetables: 0–0.5 ha = 82.8; 0.5–1 ha = 41.1; 1–2.5 ha = 31.2; 2.5–5 ha = 3.0; 5–10 ha = 0.3; 10–30 ha = 1.0; mean number of hectares of vegetables per exploitation: 0–0.5 ha = 0.10; 0.5–1 ha = 0.31; 1–2.5 ha = 0.20; 2.5–5 = 0.13; 5–10 ha = 0.02; 10–30 ha = 0.26; database Oudenaarde.

48 Eddy van Leuven, Bijdrage tot de tuinbouwgeschiedenis: de Belgische groenteteelt, 1830–1914, Aartrijke 1990, 94–95; Kevin O'Rourke, The European grain invasion, 1870–1913, in: The Journal of Economic History 57/4 (1997), 775–801; Ronsijn, Commerce and the countryside, 265–277.

49 On the effect of population density on fragmentation of holdings and crop types in the metropole of Paris, see the observations of the nineteenth-century head gardener of the horticultural school of Vilvoorde, Van Leuven, Bijdrage tot de tuinbouwgeschiedenis, 95.

Table 6: Commercialisation estimates of wheat, rye, potatoes, and vegetables according to occupational group and holding size in Oudenaarde (per cent of total output theoretically available for sale, after subtracting household needs; St. Dev. = standard deviation).

Profession of head of household and size of holdings	Rural fringe (Eindries)													Inner town (Pamele and Walburga)						
	Total N	Wheat			Rye			Potatoes			Vegetables			Total N	Potatoes			Vegetables		
		N	Mean	St. Dev.	N	Mean	St. Dev.	N	Mean	St. Dev.	N	Mean	St. Dev.		N	Mean	St. Dev.	N	Mean	St. Dev.
Cultivator	15	12	40,3	53,3	14	39,6	59,4	15	66,6	42,8	15	-7,4	86,8	8	2	65,6	27,8	8	77,4	14,9
Gardener	1	0			1	63,8		1	83,0		1	96,8		1	1	88,0		1	-20,0	
Servant	1	0			0			1	-0,5		1	-20,0		0	0			0		
Day labourer	3	0			0			3	39,0	38,4	1	-2,4		1	1	36,9		1	61,8	
Food processing	0	0			0			0			0			0	0			0		
Textile worker	3	2	-50,0	92,8	2	41,2	14,3	2	82,7	8,1	1	20,0		0	0			0		
(Factory) Worker	1	0			0			1	-78,8		1	16,0		1	0			1	60,2	
Innkeeper	3	1	-617,0		0			2	-64,5	128,6	3	16,0	65,9	11	1	34,6		10	61,1	39,1
Artisan/Artisan apprentice	9	0			0			6	-26,0	50,5	8	0,3	44,0	24	0			21	60,6	47,1
Shopkeeper	0	0			0			0			0			3	1	61,7		2	74,3	6,1
Services	3	1	-258,5		0			3	-19,3	30,5	2	-75,0	35,4	9	1	48,9		9	62,3	24,5
Rentier or private person	0	0			0			0			0			7	0			2	78,1	11,5
No profession	0	0			0			0			0			4	0			3	83,3	12,5
Merchant	2	0			0			0			1	27,3		8	1	93,0		7	47,7	39,9
Legal & administrative professions	0	0			0			0			0			9	1	26,7		5	85,4	10,0
Other	0	0			0			0			0			3	0			3	62,4	29,0
Entrepreneur	0	0			0			0			0			3	0			1	94,0	
0 – 0.5 ha	23	2	-437,7	253,5	0			16	-27,1	54,0	18	-8,7	52,0	73	2	48,1	19,2	57	61,9	36,1
0.5 – 1 ha	4	1	-46,7		3	-23,0	75,4	4	51,5	40,3	4	-33,6	107,5	10	2	42,9	8,5	10	84,6	14,4
1 – 2.5 ha	1	1	-2,4		1	27,7		1	61,7		1	0,0		7	4	61,5	30,1	6	63,9	42,6
2.5 – 5 ha	7	7	-0,1	63,8	7	33,6	42,5	7	78,3	12,5	5	9,5	118,0	2	1	93,0		1	3,2	
5 – 10 ha	3	2	84,1	2,9	3	80,3	5,3	3	90,5	9,9	3	13,3	5,8	0	0			0		
10 – 30 ha	3	3	88,5	8,5	3	88,5	6,0	3	96,0	1,0	3	43,3	45,1	0	0			0		

Source: CAO, Modern archive, OUD 711.201.4-53 and 54.

Concluding remarks

Our micro-level approach, using household-level information from a tax list and census forms, enabled us to unravel the characteristics of the urban 'rural economy' of one small and one medium-sized town in the smallholding agricultural region of inland Flanders: Oudenaarde and Kortrijk. We did so by looking at holding structures and production strategies of a broad range of urban social groups, living in and near the inner towns, with access to smaller or larger amounts of land for food production.

We can conclude that the social continuum from home food growers to professional gardeners and farmers overlapped with a geographical continuum from the rural fringe to the urban core. For both towns we find a clear difference between, on the one hand, mainly rural agricultural production patterns, located outside the core and found among inhabitants calling themselves cultivators; and on the other hand, more urban production patterns, found inside the urban core and among inhabitants with other professions. Garden plots used by self-provisioning households predominated in the inner town, whereas the (semi-)professional farming circuit was first and foremost located outside the urban core. Few households in the inner town whose primary profession was non-agricultural (farm servants and day labourers are excepted here) had access to their own plot of land – but when they did, they were able to substantially add to their family budget. They did so by strategically opting for high-yielding vegetables and potatoes, enabling them to share or perhaps to sell a part of the output. Most of these households did not keep animals apart from perhaps some small livestock, such as poultry. Still, some households in Oudenaarde with very small holdings kept one or two dairy cows, possibly grazed on the town common. Most livestock, however, was kept by (semi-)professional farming households in the fringe zone outside the town gates. There, households commercially involved in farming and gardening followed a more diverse agricultural production strategy, usually focussing not merely on vegetables and dairy but on a diverse set of crops, just as in the rest of inland Flanders. Their output was dominated by cereals (up to 50 per cent) and supplemented by potatoes, industrial crops, fodder and grassland. Professional gardeners had larger holdings than home food growers, but smaller ones than cultivators. This led them to focus less on cereals and instead to favour high-yielding potato and vegetable production. In turn, the cultivators with the largest holdings stuck to cereal cultivation, at least until the Agricultural Invasion, probably lacking the necessary labour power to produce vegetables on a larger scale. Besides cropping patterns, the urban 'rural economy' also resembled that of the surrounding countryside in terms of holding structures. Especially the rural areas of both towns hardly differed. As in the villages of inland Flanders, leasehold predominated among urban farming and gardening families (observed for Oudenaarde). In the inner town, proportions of leasehold versus owner-occupation were more ambiguous, which most likely had to do with differences in tenant-owner relations.

Thus, Thünen-like agricultural location and bid rent theories do not seem to apply to inland Flemish urban environments, since we observed no gradual shift in agricultural production towards vegetable gardening and dairying when approaching the inner town. Instead, a sharp difference existed between a focus on potatoes and vegetables by home food producers in the urban core and a much more diversified cropping pattern by (semi-)professional farming households just outside the town centre. In other words, the social agro-system of inland Flanders extended up to the town walls. Our analysis of cereal, potato, and vegetable

cultivation shows few traces of specialisation in response to the short distance to the urban market and low transport costs. Rather, the fragmentation of holdings close to the crowded inner town, where competition with the housing market and industry and service sectors mattered, made urban cultivators, professional or not, focus on high-yielding horticultural production.

The most striking observation is that very few urban households had access to land, and that the available land was very unequally distributed. Only about 10 per cent of all households living in the two towns held any land at all, and more than half of that was in the hands of the tiny fraction of people using it professionally as farmers or gardeners. Today, as in the past, access to land in densely populated urban cores can be a major constraint, restricting the role of urban farming to certain niche products while staple food production takes place elsewhere. The concentration of land that we observed also raises the question of what we expect from urban farming: mainly the reduction of food miles (which is compatible with land concentration), or also farming as a means to provide households with cheap access to food, as well as a form of leisure activity (which would require a rather broader distribution of land). These are important issues to consider when discussing the possible benefits of urban farming today.

Ines Peper

Between Village, Utopian Settlement, and Garden City

Urban Agriculture in the Company Housing Project of Eisenheim (Founded in 1844) in Historical Context

Abstract: Eisenheim was founded in 1844 near Oberhausen in the Ruhr by the mining company Gutehoffnungshütte as one of the earliest company housing projects in Germany. Like the later "colonies" by Krupp, BASF, or Farbwerke Höchst, the settlement was intended to attract workers from other regions by providing affordable housing and usually also access to land for gardening.
The paper contributes to a historical contextualisation of today's discourse on urban agriculture by first examining urban gardening and agricultural facilities in the mining company settlement of Eisenheim and then placing this case study within the broader development of urban agriculture from the eighteenth to the twentieth centuries. Eisenheim is then compared to four other "model villages" which, while representing a wide range of ideological motivations and socio-economic backgrounds, faced similar challenges in their agricultural aspirations. The main reference points of this analysis are: first, how access to land was organised, what property regimes were put in place, and how this affected the long-term preservation of agricultural land use. Second, what impact subsistence agriculture had on the residents' food resilience, quality of diet, and household income formation. Third, how subsistence gardening and agriculture and the spatial organisation of the settlements' green areas contributed to the residents' community life.

Key Words: Eisenheim, subsistence gardening, urban agriculture, food security, model village, company housing

Introduction

In the past ten to 15 years, a vibrant urban gardening movement has both built on and sparked renewed academic interest in the role of subsistence production in modern economies. The World Bank's 2008 *Global Report on Agriculture* and the UNCTAD's 2013 *Trade and Environment Report* have been milestones in the collection and public discussion of scientific evidence for the importance of small-scale, subsistence, and part-time farming and gardening for food production worldwide.[1] Since the 1970s, numerous case studies have shown that

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1 Beverly D. McIntyre et al. (eds.), Agriculture at a Crossroads. International Assessment of Agricultural Knowledge, Science and Technology for Development. Global Report, Washington 2008, https://www.globalagriculture.

practices of subsistence food production play a fundamental role in the livelihoods not only of rural, but also of large parts of city populations in the Global South, and that they are not at all mutually exclusive with wage labour or market-oriented commercial activities; in the light of these findings Marcel van der Linden has proposed a fundamental re-evaluation of the history of subsistence and wage labour.[2] In a similar vein, Elisabeth Meyer-Renschhausen compares global urban gardening practices to the mixed incomes ("Mischökonomie") large parts of the population in nineteenth-century Europe relied on.[3] Yves Segers and Leen van Molle retrace urban allotment gardens as far back as the fourteenth century, seeing them therefore as a "tried and tested recipe" enabling solutions for a greener future of cities worldwide.[4]

While the "back to the land" movement in the 1960s to 80s operated largely within the framework of a dichotomous divide between "rural" and "urban",[5] sustainable living has increasingly been viewed as a combination of characteristics of both over the past decades, with urban gardening or agriculture often being a central feature in larger concepts like the transition town movement, permaculture, or the eco-village movement.[6] Promoting local and ecologically sustainable food production and securing food sovereignty or food resilience both for low-income populations and in case of macro-economic crises are among the foremost aspirations of twenty-first-century urban agriculture initiatives. Most proponents also emphasise its community-building potential. In permaculture concepts, both community and urban gardening are similarly viewed as conducive to sustainable land use ("permanent agriculture").[7] Establishing community in otherwise anonymous neighbourhoods and forging

org/ (last visited in Sept. 2019). Research commissioned by UNCTAD came to similar results: United Nations Conference on Trade and Development (ed.), Trade and Environment Review 2013. Wake up before it is too late. Make Agriculture truly sustainable now for Food Security in a changing climate, https://unctad.org/en/PublicationsLibrary/ditcted2012d3_en.pdf (last visited in Sept. 2019).

2 Marcel van der Linden, Workers of the World. Essays toward a Global Labor History, Leiden et al. 2008, 319–337.

3 Elisabeth Meyer-Renschhausen, Die Gärten der Frauen, in: Veronika Bennholdt-Thomsen et al. (eds.), Das Subsistenzhandbuch. Widerstandskulturen in Europa, Asien und Lateinamerika, Vienna 1999, 120–136, 120. For the term "Mischökonomie" in the context of European history, see: Gunter Mahlerwein, Mischökonomie, in: Enzyklopädie der Neuzeit Online, http://dx.doi.org/10.1163/2352-0248_edn_a2765000 (last visited in Sept. 2019).

4 Yves Segers/Leen Van Molle, Workers' Gardens and Urban Agriculture. The Belgian Allotment Movement within a Global Perspective (from the Nineteenth to the Twenty-First Century), in: Zeitschrift für Agrargeschichte und Agrarsoziologie 62/2 (2014), 80–94, 93.

5 Dona Brown, Back to the Land: The Enduring Dream of Self-Sufficiency in Modern America, Madison, WI 2011, 132, speaks of a "Dante-esque image of the industrial city" motivating the movement. Yet, roots of the present urban gardening movement go back to 1970s New York: Elisabeth Meyer-Renschhausen, Von der Allmende zur urban agriculture: Kleinstlandwirtschaft und Gärten als weibliche Ökonomie, in: L'Homme Z.F.G. 27/2 (2016), 73–91, 74–77.

6 Amanda Smith, The Transition Town Network. A Review of Current Evolutions and Renaissance, in: Social Movement Studies 10/1 (2011), 99–105; Rob Hopkins et al., Peak Oil and Transition Towns, in: Architectural Design 82/4 (2012), 72–77; Bill Mollison, Handbuch der Permakultur-Gestaltung, Graz 2010 (orig.: Permaculture: A Designer's Manual, Sisters Creek 1988), 77–79; Bill Metcalf/Diana Christian, Intentional Community, in: Encyclopedia of Community: From the Village to the Virtual World, vol. 2, London 2003, 70–76; Albert K. Bates, Ecovillages, in: ibid., 423–425; Global Ecovillage Network (GEN), https://ecovillage.org/global-ecovillage-network/about-gen/ (last visited in May 2019).

7 Mollison, Handbuch, 564–565, 581–585, 601–602.

cross-ethnic relationships are goals often cited by urban gardening initiatives,[8] which in turn often utilise permaculture concepts and methods.

Realisation of these aspirations, however, depends on a number of preconditions. Marcel van der Linden names access to land, seeds, tools, and livestock as necessary "resources of subsistence labor" and points to a problem which can be especially pressing in some urban contexts: when high population density increases the scarcity of these resources, those with the lowest monetary income will also be the ones who most likely will be lacking access to subsistence activities.[9] Based on similar considerations, Stephan Barthel and his co-authors specify two main conditions for increasing food resilience through urban agriculture: the protection of green spaces against profit-driven land use and the existence of sufficient gardening knowledge.[10]

Central aims of today's urban gardening movement, like the establishment of ecologically sustainable forms of local food production and the fostering of a village-like density of social relations, were also prominent in the garden city and life reform movements around 1900; where the challenges of gaining and preserving access to land are concerned, there likewise seem to be considerable continuities. But many of today's approaches to urban agriculture are formulating an agenda of progressive democratisation and cultural modernisation that is not at all nostalgic and can only to some degree be seen in continuity with older concepts of cooperative self-organisation. Another discontinuity may be seen in the contrast between the sheer necessity of subsistence food production for many nineteenth- and early twentieth-century urban gardeners and the affluence of many of their twenty-first-century successors – although this difference seems far less absolute when considering the involvement of middle classes and cultural avantgardes in the garden city and life reform movements on the one hand, and the deep roots of today's urban gardening movement in practices and initiatives from impoverished city districts in the USA and the Global South on the other.

This paper aims at contributing to a historical contextualisation of today's discourse on urban agriculture by first examining urban gardening and agricultural facilities in the mining company settlement of Eisenheim and then placing this case study within the broader development of urban agriculture from the eighteenth to the twentieth centuries. In order to provide a background not only in terms of theoretical discourse, but also some source-based discussion of comparable practical solutions in other settlements, this will include comparing Eisenheim to four other model villages which, while representing a wide range of ideological motivations and socio-economic backgrounds, faced some similar challenges in their agricultural aspirations. The main reference points of this analysis will be: first, how access to land was organised, what property regimes were put in place, and how this affected the long-term preservation of agricultural land use. Second, what impact subsistence agriculture had on

8 Karen Meyer-Rebentisch, Das ist urban gardening! Die neuen Stadtgärtner und ihre kreativen Projekte, Munich 2013, devotes an entire chapter (56–77) to intercultural city gardens, to name just one example of popular literature on urban gardening emphasising this aspect; see also Monica White, Sisters of the Soil: Urban Gardening as Resistance in Detroit, in: Multidisciplinary Global Contexts 5/1 (2011), 13–28, for an introduction to academic research on the connections between urban gardening and community building across ethnic or racial divisions.

9 Van der Linden, Workers, 330–331.

10 Stephan Barthel et al., Food and Green Space in Cities. A Resilience Lens on Gardens and Urban Environmental Movements, in: Urban Studies 52/7 (2015), 1321–1338.

the residents' food resilience, quality of diet, and household income formation. Third, how subsistence gardening and agriculture and the spatial organisation of the settlements' green areas contributed to the residents' community life.

The organisation of urban agriculture in Eisenheim

Eisenheim was founded in 1844 by a steelworks and mining company, "Hüttengewerkschaft und Handlung Jacobi, Haniel & Huyssen" (JHH), later known as Gutehoffnungshütte. It is the German Ruhr's oldest surviving company housing project.[11] Like the later "workers' colonies" established by Krupp, BASF, or Farbwerke Höchst, the settlement was intended to attract migrants primarily from rural regions by providing affordable housing and access to land for gardening and small livestock.

In the nineteenth century, Eisenheim was administratively part of the rural commune of Osterfeld, whose village centre was located some two kilometres away, in what was then the Prussian province of Westphalia. Since 1929, Osterfeld has been a district of the city of Oberhausen, now in North Rhine-Westphalia.[12] In the 1970s, residents formed a citizens' initiative against the planned destruction of the settlement; they were assisted by a project group from the University of Applied Sciences Bielefeld's design department, which initiated a broad academic effort to research industrial workers' cultures and preserve their historical sites.[13] Although Eisenheim was granted the status of a protected heritage site in 1973, the plans for demolition were not completely abandoned until 1978. In 2012, Eisenheim became a candidate for World Cultural Heritage status together with other settlements in the Ruhr.[14]

The foundation of Eisenheim can be mainly credited to the firm's principal manager, Wilhelm Lueg (1792–1864).[15] He was greatly influenced by a journey to England in 1829, where he had studied technological developments as well as observing some of the social consequences of rapid industrialisation. Lueg's aim in founding Eisenheim was to bind skilled workers to the company by providing them with housing and access to land in addition to their wages. Only half of the first Eisenheim residents came from the region, while the rest were recruited from other traditional iron-producing areas in western Germany – like

11 The company's full name was changed to "Actienverein für Bergbau und Hüttenbetrieb Gutehoffnungshütte" (GHH) in 1872. The company was founded in 1808/1810 through a merger of three eighteenth-century ironworks enterprises and soon began producing steam engines, rails, locomotives, steamboats, bridges, and many other iron and steel products. During the 1850s it also entered the mining business, extracting ore as well as coal; Die Gutehoffnungshütte, Oberhausen, Rheinland. Zur Erinnerung an das 100jährige Bestehen 1810–1910, Oberhausen 1910; Dorit Grollmann, "… für tüchtige Meister und Arbeiter rechter Art". Eisenheim – Die älteste Arbeitersiedlung im Ruhrgebiet macht Geschichte, Cologne et al. 1996, 8–24. After the Gutehoffnungshütte's divestiture in 1953, Eisenheim first belonged to the Hüttenwerke Oberhausen, then to Thyssen from 1969 to 1986, then to MAN. Today the settlement is owned by the real estate company Vivawest: Roland Günter/Janne Günter, Die Arbeitersiedlung Eisenheim in Oberhausen: Die älteste Arbeitersiedlung im Ruhrgebiet, Cologne 2013, 25.

12 Grollmann, Eisenheim, 26.

13 By 1975, a network of 50 citizens' initiatives was fighting for historical workers' settlements in the Ruhr; for a detailed account, see Günter/Günter, Arbeitersiedlung, 20–25.

14 Ibid., 25.

15 Bodo Herzog, Wilhelm Lueg, in: Neue Deutsche Biographie, vol. 15, Berlin 1987, 460–462.

Siegerland, Bergisches Land or Eifel – and from Belgium and France; four specialists in the production of rails had been brought from England in 1845.[16] In the later building phases of Eisenheim, most immigrants came from regions further to the east: Silesia, the Habsburg lands, Prussia, and Eastern Europe.

When Lueg began planning the settlement in the 1830s, only foremen (*Meister*) and their families were supposed to receive gardens and barns.[17] It was not uncommon for the employment contracts of factory clerks and technicians to include housing, light, firewood and a garden[18] – in short, the means to establish a complete household. The first seven semi-detached houses in Provinzialstraße,[19] which were built in 1846 and resembled English cottages, were reserved for this class of residents. But in the same year, Lueg would change his mind and decide to likewise endow ordinary workers and their families not only with housing, but with gardens and barns. The first apartment buildings for workers were two-storey blocks of flats along the streets called Kasernenstraße and Wesselkampstraße that followed the more urban model of housing for Prussian soldiers and their families.[20] While the barns of the *Meisterhäuser* were directly attached to the houses, the barns and gardens of these *Kasernenhäuser* were located separately.

Starting with the second phase of construction (1865/66), the specific Eisenheim layout was established. Rows of houses with four apartments each lined the streets, with every apartment featuring a downstairs kitchen and living room, two upstairs bedrooms, a cellar and a separate entrance. This house type followed a model first employed in Mühlhausen/Mulhouse in Alsace in 1853 which had been highly influential ever since it was shown at the World's Fair of 1855.[21] From 1872 onwards, the four entrances of these Eisenheim *Kreuzgrundriss* houses faced in separate directions so that each apartment had one of the house's façades to itself. A small decorative garden, located either in the gaps between houses or between the barns, belonged to each flat. The barns formed a second row of buildings parallel to the houses and separated by a path called Hofweg, and were usually used for pigs and other livestock like goats, sheep, chickens, ducks, and geese.[22] Many workers also kept carrier pigeons under the barn roofs as a hobby. Toilets were located within the barns, as there were no bathrooms in the houses. As in many villages of the time, all water had to be fetched from public pumps, which was considered women's work.[23]

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16 Grollmann, Eisenheim, 38. The company had begun the production of rails in 1842 following its first locomotive in 1839; Die Gutehoffnungshütte, vi.

17 Grollmann, Eisenheim, 24.

18 Ibid.

19 For a detailed description of Eisenheim's construction, see Günter/Günter, Arbeitersiedlung, 9–25.

20 Grollmann, Eisenheim, 28.

21 The *cité ouvrière* in Mulhouse became an important model for company housing projects by BASF, Farbwerke Höchst, Ruhr mining companies and others; Michael Honhart, Company Housing as Urban Planning in Germany, 1870–1940, in: Central European History 23/1 (1990), 3–21, 7; Garyfalia Palaiologou/Fani Kostourou, Long-Term Challenges in Urban Housing: In the Search for Intersections between Design and Policy Regulations, in: Kirsten Day (ed.), AMPS Proceedings Series 7: Future Housing: Global Cities and Regional Problems, Melbourne 2016, 39–58, 48–52.

22 Janne Günter, Leben in Eisenheim: Arbeit, Kommunikation und Sozialisation in einer Arbeitersiedlung, Weinheim 1980, 137–138.

23 Günter/Günter, Arbeitersiedlung, 18.

Figure 1: Eisenheim: *Kreuzgrundriss* houses, barns, and gardens

Source: Photo by Rainer Halama, Creative Commons Attribution ShareAlike 3.0 Unported, https://commons.wikimedia.org/wiki/File:Eisenheim5884.jpg.

Beyond the barns lay the kitchen gardens, with the ample space between the streets divided into plots of about 220 m^2 for each family.[24] What was grown on these plots during the nineteenth and early twentieth century can only be extrapolated from interviews with twentieth-century residents, as no gardening records were kept in the Gutehoffnungshütte's historical archive. When Eisenheimers were systematically interviewed in the early 1970s,[25] many of them reported first-hand or second-hand memories reaching back to the turn of the century. They recalled not only potatoes and cabbage, but a broad range of vegetables being grown, and even the decorative gardens being used for planting berry bushes and fruit trees.[26] According to these reminiscences, most of the garden work was done by women.[27] Addi-

24 Günter, Leben, 103. The Stiftung Rheinisch-Westfälisches Wirtschaftsarchiv (RWWA), which took over the former Gutehoffnungshütte's historical archive in 1995, holds a number of contemporary maps detailing the building process as well as the layout of plots: 1846: RWWA 130-2307-0; 1856: RWWA 130-2307-1; 1866: RWWA 130-2307-2; 1897: RWWA 130-33014-8 1897; 1903: RWWA 130-33014-8. The Feld was newly parcelled around 1900, so that the plots on maps before and after that time do not correspond; another deviation between older and more recent maps results from the renaming of the former Koloniestraße to Werrastraße in 1929; Günter/Günter, Arbeitersiedlung, 11. In its early years, Eisenheim had no street names at all.

25 These interviews were conducted in the context of an early oral history project; some of their results are published in Janne Günter/Roland Günter, "Sprechende Straßen" in Eisenheim. Konzept und Texte sämtlicher Tafeln in der ältesten Siedlung (1846/1901) im Ruhrgebiet, Essen 1999; Roland Günter, Im Tal der Könige. Ein Reisebuch zu Emscher, Rhein und Ruhr, Essen 1994; Günter, Leben.

26 Günter/Günter, Sprechende Straßen, 59–60, 64, 102–105.

27 Günter/Günter, Arbeitersiedlung, 7; Günter, Tal der Könige, 146. This fits with broader analyses of nineteenth- and early twentieth-century gardening as predominantly women's work: Meyer-Renschhausen, Allmende;

tionally, residents could lease further strips of arable land from the company to grow more potatoes or even grain, although tending to these entailed a considerable amount of extra work. Anton Stoike, for example, born in 1881, recalled how he used to work on his leased field of a quarter *Morgen* (around 600 m^2) after coming home already tired from the coal mine in the early 1900s.[28] Interviewees told of a wide circulation of homegrown food among residents in the form of presents, festivities, swaps, and mutual aid; I have found no evidence of Eisenheimers selling produce on outside markets.

The layout of the settlement was well thought-out in that it was a far more economical regime of land use than detached houses with individual gardens would have been, yet it provided residents with similar advantages. Each apartment resembled a small house, as it combined private upstairs space where a worker on night shift could sleep during the day, easily accessible downstairs space, a storage cellar for coal as well as potatoes, vegetables and fruit, and the relative privacy of its own entrance and staircase. On the other hand, the system made for a far less condensed neighbourhood than many working-class areas in contemporary Manchester, for instance, where rows of brick houses were built directly adjacent to each other in order to maximise profits for investors. The planners of Eisenheim dedicated a comparably very generous portion of the premises to gardening and livestock husbandry; the organisation of the available green areas into a rational grid of plots, paths and buildings helped to make use of their full potential.

The land on which Eisenheim was built had been purchased by the company in 1844 from the farmer (*Kolon*) Theodor Rübekamp. It consisted chiefly of a piece of arable land called Wesselkamp, whose area is specified as *32 Morgen, 59 Ruthen und 42 Fuß* in the purchase contract.[29] Assuming that this can be read as Prussian *Morgen*, it would translate into slightly more than eight hectares. As the field was wet, the contract specifically noted that the right to drain water onto a neighbouring farmer's premises, which Rübekamp had won in an 1838 lawsuit, would pass to the new owners. In the following years, the JHH additionally bought part of Rübekamp's and other farmers' shares of the newly enclosed Osterfeld commons, which was sandy heath land (*Heide*).[30] The immediate sale of newly enclosed common land was a decision made by many small farmers in the region, chiefly because they lacked resources to invest into the amelioration necessary to make the land arable.[31]

Gisela Mettele, Wieviel Garten braucht die Gartenstadt? Leben im Grünen als genossenschaftliches Reformprojekt, in: Mark Häberlein/Robert Zink (eds.), Städtische Gartenkulturen im historischen Wandel, Ostfildern 2015, 193–212, 208–209.

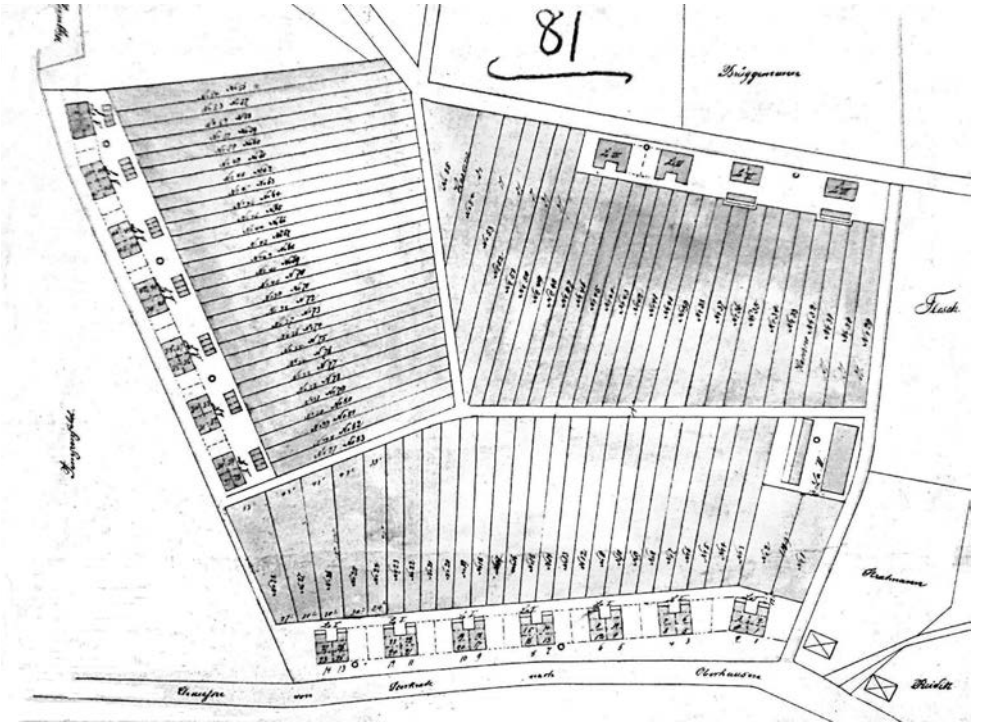
28 Günter/Günter, Sprechende Straßen, 57–58, 103.

29 The contract is dated 6 February 1844, RWWA 130-165-15, without foliation (note: there is a second folder with the same shelfmark that contains more papers concerning the purchase of land for Eisenheim).

30 Among other documents, the two folders sharing the shelfmark RWWA 130-165-15 contain the verdict in the lawsuit of Theodor Rübekamp versus Theodor Hülsken, known as "Timpe", dated 3 February 1838, a contract dated 29 October 1844 and promising Rübekamp's expected share from the ongoing enclosure to the JHH, and documents concerning a plot purchased from Johann Kalveram. The latter parcels were both under one hectare in area. RWWA 130-204-12 is a detailed map of the relevant parts of the Osterfeld commons, dated 6 March 1844. A rough account of the Osterfeld enclosure procedures is provided in Klaus Weinberg, Zehn Gemeinheiten in Osterfeld machen Ärger, in: Kickenberg 34 (2015), 4–7.

31 Georg Fertig, Gemeinheitsteilungen in Löhne: Eine Fallstudie zur Sozial- und Umweltgeschichte Westfalens im 19. Jahrhundert, in: Karl Ditt et al. (eds.), Agrarmodernisierung und ökologische Folgen. Westfalen vom 18. bis zum 20. Jahrhundert, Paderborn et al. 2001, 393–426, 405.

Figure 2: Map of Eisenheim in 1866



Source: Stiftung Rheinisch-Westfälisches Wirtschaftsarchiv zu Köln (RWWA) 130-2307-2.

Eisenheim was not the company's only housing project: the JHH had built its first workers' accommodations in the 1820s.[32] By 1910, the Gutehoffnungshütte was renting out 2,414 apartments in 720 houses within at least ten settlements.[33] Nevertheless, only 5 to 6 percent of its 9,000 employees lived in company housing in 1900,[34] and as employment numbers rose to 19,500 in 1905 and over 80,000 in 1923,[35] workers provided with apartments and gardens remained a minority. As a consequence of the ongoing housing shortage, Eisenheim – like other workers' colonies – had become increasingly overcrowded since the stock market crash of 1873 had brought building activities to an abrupt halt. In the late 1890s, construction was resumed energetically, but for a long time was unable to keep up with demand.[36] Many residents were sub-letting rooms of their apartments, which were small to begin with (55 to

32 Grollmann, Eisenheim, 24.

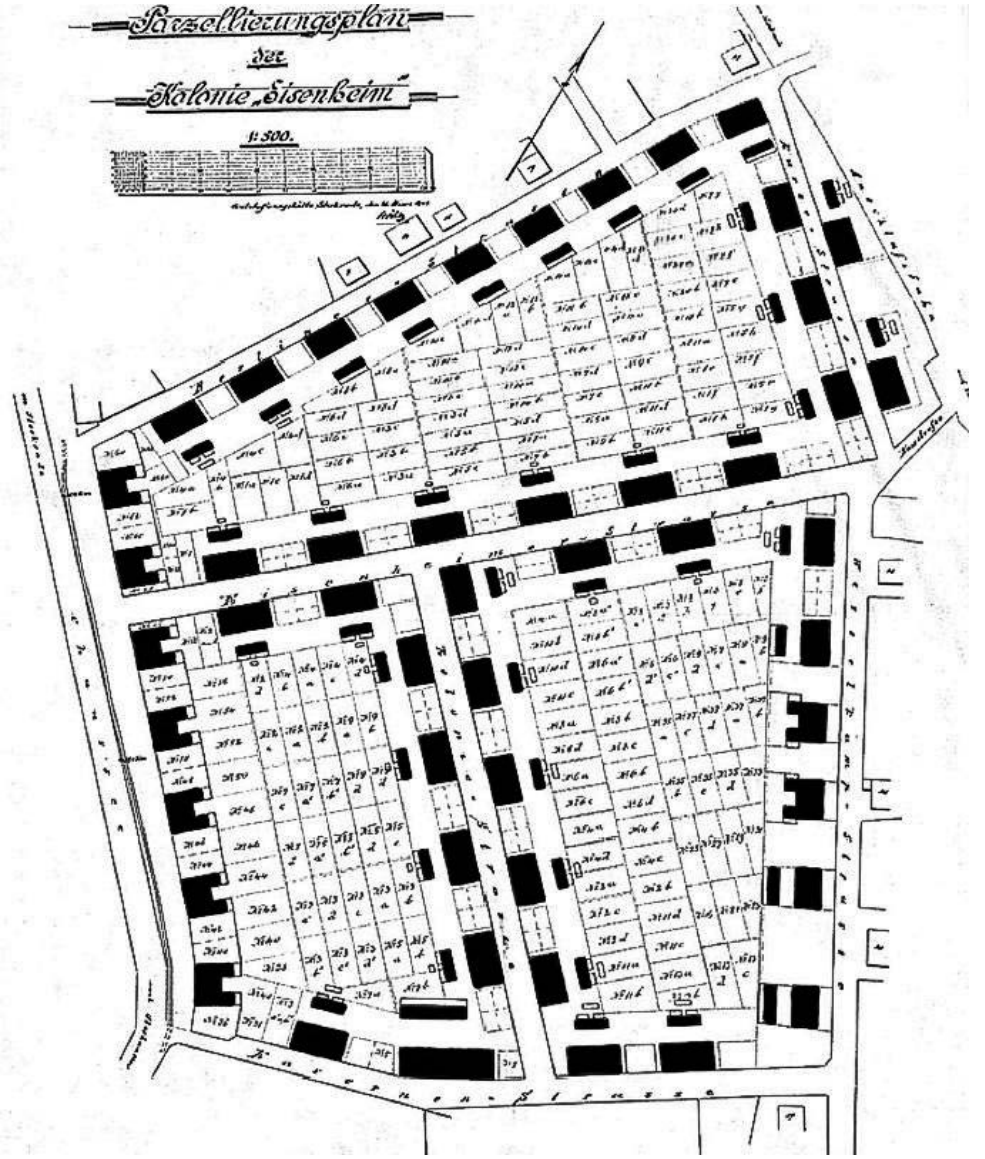
33 Die Gutehoffnungshütte, 167. The following settlements were founded after Eisenheim: Dunkelschlag, Stemmersberg, Gerschermannshof, Vonderbruch, Dellwig, Nonkeil, Gustav Wiesner, Hiesfeld, Dentsch.

34 Grollmann, Eisenheim, 42, 30.

35 Gerhard Hetzer, Gutehoffnungshütte (GHH), in: Historisches Lexikon Bayerns, https://www.historisches-lexikon-bayerns.de/Lexikon/Gutehoffnungshütte_(GHH) (last visited in May 2019).

36 Grollmann, Eisenheim, 29, 42.

Figure 3: Map of Eisenheim in 1903. The buildings are coloured black.



Source: RWWA 130-33014-8, slightly adapted.

65 m² in the 1872 *Kreuzgrundriss* houses[37]), considering that families had many children and often housed a widowed grandmother.[38]

37 Günter/Günter, Arbeitersiedlung, 11.
38 Ibid., 11.

Landownership, food sovereignty, and income formation in Eisenheim

Roland and Janne Günter have pointed out that subsistence gardening and small-scale agriculture provided essential parts of the Eisenheim residents' incomes, since well into the twentieth century their wages were not high enough to reliably support a family.[39] This claim is substantiated by broader research on the situation of workers throughout the nineteenth century, which shows large parts of the population living under precarious conditions characterised by low wages, insecure jobs, and a high risk of poverty that became a near certainty in old age or illness.[40] Keeping livestock and growing fresh vegetables and fruit must also be considered a distinct improvement in the quality of workers' diets compared to those of large parts of the nineteenth-century urban populations, who rarely consumed meat or fresh produce, milk or eggs, with many subsisting primarily on potatoes, bread and surrogate coffee.[41] Looking back at their own youth and the lives of their parents in their 1970s interviews, older Eisenheimers stressed the importance of gardening and animal husbandry for their livelihoods and the fact that these sources of nutrition saved them from hunger even in times of war or crisis.[42] They also valued the supplement which gardening still provided to their old-age pensions.[43] By this time, chickens, ducks, and rabbits were the only farm animals kept in Eisenheim, but many residents had at times raised up to four pigs or sheep in their small barns well into the twentieth century.[44]

Gardens, barns, and storage cellars were the features of company housing settlements that were most praised by advertisements and the agents sent to Silesia, Prussia, and other rural regions by Ruhr companies starting in the 1870s to recruit workers.[45] A 1908 advertisement for a new colony associated with the coal mine "Viktoria" near Rauxel painted a vivid picture of a settlement resembling a Masurian village ("wie ein masurisches Dorf").[46] While the promise of being admitted into a company settlement did not come true for all newcomers, subsistence gardening and part-time farming by workers and miners was a systemic feature of the Ruhr's economic and social structure.[47] Most migrants who came from East Prussia or Congress Poland belonged to the fast-growing rural underclasses of these regions, lacking sufficient access to land to support themselves, but skilled in gardening and agriculture;[48]

39 Günter/Günter, Sprechende Straßen, 64.

40 Jürgen Kocka, Arbeiterleben und Arbeiterkultur. Die Entstehung einer sozialen Klasse, Bonn 2015, 131–132.

41 Kocka, Arbeiterleben, 113–124; Jürgen Schmidt, Arbeiter in der Moderne. Arbeitsbedingungen, Lebenswelten, Organisationen, Frankfurt 2015, 42. Kocka sees the displacement of the "monotonous" legumes by potatoes as the lower classes' staple food during the nineteenth century as an improvement in food quality, but considering the ongoing scarcity of other proteins in the diets of a large part of the population, this does not seem entirely convincing.

42 Günter, Tal der Könige, 139–140, 146.

43 Günter, Leben, 137; Günter/Günter, Sprechende Straßen, 103.

44 Günter, Leben, 137–138.

45 Christoph Kleßmann, Polnische Bergarbeiter im Ruhrgebiet 1870–1945. Soziale Integration und nationale Subkultur einer Minderheit in der deutschen Industriegesellschaft, Göttingen 1978, 39.

46 Grollmann, Eisenheim, 30.

47 Kocka, Arbeiterleben, 126, 169.

48 Kleßmann, Polnische Bergarbeiter, 24–25.

many arrived carrying their belongings wrapped in a piece of cloth and leading a goose on a leash.[49] As their children would later recall, these migrants experienced their new life in Eisenheim and comparable settlements as a rise in social status and a considerable improvement of their living conditions.[50]

All buildings and land remained the company's property, contrary to Lueg's earlier plan to allow workers to buy their houses (he had originally thought that the status of being a homeowner would keep them from joining revolutionary activities[51] – a consideration that remained prominent in the minds of many nineteenth-century housing reformers). Barns and garden plots were let together with the apartments, and rental contracts were linked to a job in one of the company's steelworks or coal mines; if a tenant's employment was terminated, the family was to leave the apartment within two weeks' time.[52] This meant that their subsistence activities did nothing to reduce the dependency of Eisenheim residents on their employer, as in the case of a conflict they stood to lose their housing and garden together with their jobs.

Rent was considerably lower than the regional average.[53] In this respect as well as with the relatively low building density of the settlement, the company chose the contentment of workers and resulting reduced fluctuation rates over higher profits from rents. This corresponded to the highly paternalistic attitude recognizable in Lueg's letters[54] as well as in the company's early adoption of some elementary welfare measures.[55] Lueg had been to England and was well-read, and it has therefore been assumed that his plans for Eisenheim were influenced by English building styles as well as by the ideas of Robert Owen and Charles Fourier.[56] Robert Owen's workers' settlement of New Lannark had famously begun to provide up to 1,000 inhabitants with apartments, welfare provisions, and gardening spaces as early as 1800.[57] German literature on the reform of workers' housing as a means to alleviate poverty dates back to the 1840s.[58]

While centralised landownership by the company maintained the Eisenheimers' dependence on the their employer, it did also ensure that the grounds and buildings remained outside the real-estate market. This meant that Eisenheim's green spaces could be preserved even while the fast-growing city of Oberhausen was enclosing the settlement. Hence Eisenheim met the first of the two conditions Stephan Barthel and his co-authors specify for increasing

49 Günter, Tal der Könige, 89–91.

50 Ibid., 139.

51 Grollmann, Eisenheim, 28.

52 Ibid., 40.

53 Günter/Günter, Arbeitersiedlung, 17; Grollmann, Eisenheim, 41–42.

54 Lueg's letters between the 1830s and 1860s show him involved in poor relief (such as the distribution of grain during the food price crisis of 1847) and social projects (e.g. contributions towards school buildings or the establishment of a pharmacy in Sterkrade) as well as strongly opposed to pubs selling liquor to workers and to (in his view) exaggerated expectations of workers concerning wages and living standards, yet advocating a trusting relationship between employers and employed; RWWA 130-20002-50-1 (copies). Although several of the letters concern the region around Sterkrade, Eisenheim is never explicitly mentioned.

55 Grollmann, Eisenheim, 40. For the company's own account of its welfare activities, see Die Gutehoffnungshütte, 166–174. Lueg's cash book notes expenses for sick workers as early as 1808–1815; Herzog, Wilhelm Lueg, 462.

56 Günter/Günter, Arbeitersiedlung, 3; Günter/Günter, Sprechende Straßen, 31.

57 Markus Elsässer, Soziale Intentionen und Reformen des Robert Owen in der Frühzeit der Industrialisierung. Analyse seines Wirkens als Unternehmer, Sozialreformer, Genossenschafter, Frühsozialist, Erzieher und Wissenschaftler, Berlin 1984, 125.

58 Honhart, Company Housing, 5.

a city's degree of food resilience through gardening: protection of green spaces against profit-driven land use.[59] The other condition for food resilience through urban gardening named by Barthel et al. is the existence of sufficient gardening knowledge. This condition was also met in Eisenheim due to the rural origins of most of its early residents. In this respect, it is noteworthy that these agricultural skills seem to have been taken for granted by the Gutehoffnungshütte and other companies organising housing for their workers. While there were many efforts to improve the workers' morals and hygiene, they seem to have been trusted to make the best use of their gardens and livestock without any instruction from the company.

Rural and urban features and community life in Eisenheim

Eisenheim has been described as a compromise between traditional village and modern urban quarter, a "model of transition" ("Modell des Übergangs").[60] This view seems to imply a more or less linear historical development towards modernisation and urbanisation, with Eisenheim and similar workers' settlements assuming a median position chronologically as well as structurally, and reinforces older assumptions about a mutual exclusivity of subsistence and market-oriented production. But, as has been shown above, Eisenheim's layout and infrastructure actually were a highly functional response to the requirements of industrialisation, with subsistence agriculture complementing wages, stabilising the workforce, and overall supporting instead of counteracting the wage-labour relationship.[61] Eisenheim's planners made no attempts to hide the settlement's functionality and modernity behind traditional design elements, while many of the later nineteenth-century company housing projects deliberately employed vernacular architectural features in an effort to create a village-like appearance and instill "Heimatgefühl" in residents.[62]

The dichotomy of traditional and rural versus modern and urban ways of life has dominated many political and social discourses since the nineteenth century and profoundly influenced the evaluation of subsistence gardening. Examples range from Friedrich Engels's rejection of house and land ownership as a step backwards towards a "semi-feudal" ("halbfeudal") state[63] to conservative, *völkisch*, or fascist efforts to preserve what they saw as German traditional lifestyles against industrialisation and the juggernaut of the modern city. In the twentieth century, the equation of modernity with densely developed cities and a population living exclusively on monetary incomes remained dominant. Le Corbusier deemed individual vegetable gardens troublesome and inefficient; subsequent generations of city planners remained firmly convinced of the merits of lawns and evergreen hedges, and of turning the residual green spaces between blocks of flats into exclusively decorative areas. In a similar spirit, officials in the Soviet Union or the GDR never acknowledged the huge contribution

59 Barthel et al., Food and Green Space.

60 Günter/Günter, Arbeitersiedlung, 8.

61 For more on this "entanglement of wage labor and subsistence labor" see Van der Linden, Workers, 327–330.

62 Cedric Bolz, Constructing 'Heimat' in the Ruhr Valley: Krupp Housing and the Search for the Ideal German Home 1914–1931, in: German Studies Review 34/1 (2011), 17–43, 18.

63 Friedrich Engels, Zur Wohnungsfrage, Hottingen/Zurich 1887, Vorwort zur 2. Auflage, cited from Karl Marx/Friedrich Engels, Werke, vol. 21, Berlin 1975, 325–334, 334.

private kitchen gardens and small-scale farming made to the countries' overall vegetable production.[64]

When architectural planners expedited the demolition of settlements like Eisenheim in the name of modern urbanity during the 1960s and 70s, they argued not only that high-rise buildings would offer working-class residents larger flats, modern bathrooms, and garages, but also that the anonymity of these flats was a prerequisite for a clear, "modern" distinction between public and private spaces.[65] Janne and Roland Günter's sociological research on the communication patterns of Eisenheim residents was explicitly conceived as a challenge to these theories. It was focused on the interrelatedness of architectural design and social interactions and the importance of local social networks for Eisenheim's working-class residents, especially for women, children, and elderly persons.[66] Eisenheim's open spaces with their manifold possibilities for outdoor activities like gardening, tending to animals, and do-it-yourself practices were shown to be conducive to its tight-knit community.

According to this analysis, the layout of Eisenheim seems highly functional from a social perspective. It provides a well-balanced mix of private spaces, such as apartments with sound-proof brick walls and private entrances, and semi-public and public spaces like residential streets, paths and gardens, with many interlinking features such as low windowsills or fences facilitating informal communication opportunities. Thus, Eisenheim seems to have fulfilled all the criteria for social sustainability Robert Gilman lists for an eco-village: "To fulfil the ideal that the eco-village support healthy human development requires that the buildings in the community: have a good balance of public space and private space; encourage community interaction; support a full diversity of activities."[67]

Gardening in nineteenth- and early twentieth-century social reform discourse: from allotment gardens to Ebenezer Howard's garden city concept

From the very beginning of the nineteenth century, providing the poor or working-class population with gardening space has been an oft-proposed solution to pauperism and the social problems accompanying industrialisation and urbanisation. Where the idea was put into practice, it often took the shape of allotment gardens: small plots separate from the house and reserved for subsistence gardening, intended as a supplement to monetary incomes and not as a livelihood in itself, as a smallholding or a peasant farm would have been. In England, legislation to make the establishment of poor-relief gardens compulsory when enclosing common land was discussed as early as 1793 to 1800.[68] The first German allotment garden

64 Micheline Nilsen, The Working Man's Green Space. Allotment Gardens in England, France, and Germany, 1870–1919, Charlottesville 2014, 14; Meyer-Renschhausen, Allmende, 80–81.

65 Günter, Leben, 28–31, challenges these theses as formulated by Hans Paul Bahrdt and others in the 1960s and 1970s in the context of Eisenheim.

66 Günter, Leben; Günter/Günter, Arbeitersiedlung, 18.

67 Robert Gilman, The Eco-village Challenge, in: Living Together. Sustainable Community Development = Context 29 (1991), 10–15, https://www.context.org/iclib/ic29/gilman1/ (last visited in May 2019).

68 Nilsen, Allotment Gardens, 24.

was started in Kappeln in 1806 by the landgrave of Hesse-Kassel;[69] the first German cities to dedicate patches of public ground to the poor as gardening land were Kiel (around 1820), Königsberg (1829), Leipzig (1832), and Berlin (1833).[70]

Over the course of the century, charitable allotment garden projects – and later the association-based *Schrebergärten* – became more and more widespread. Micheline Nilsen has pointed out that many nineteenth-century plans included, but did not stress, subsistence gardening: "The vegetable garden has had a modest but continuous presence in urban utopian writings", playing an "understated" role in the concepts of Robert Owen, Charles Fourier, Pierre-Joseph Proudhon, Jean-Baptiste Godin, and others.[71] Although allotment gardens, if installed, often worked out well, supply could never keep up with demand, and most gardens did not last long in the face of city growth and rising real-estate prices.[72] This problem was addressed in a more radical fashion first by Chartists and the English "Land and Labour League" in the 1840s, then by the German land-reform movement towards the end of the nineteenth century. But it was only after World War I that allotment garden associations gained lasting municipal and legislative protection.

The garden city movement that proliferated internationally around 1900 can be considered a forerunner of many current movements in that it strove to bridge the divide between country and city, and in that at least several of its proponents wished to do so with a progressive agenda in terms of direct democratic and cooperative structures as well as technological innovations. In Germany, the movement was informed not only by Ebenezer Howard's internationally famous book *Garden Cities of To-morrow* (1902)[73] and other housing-reform literature, but also by the practical examples of workers' settlements in the Ruhr. A continuous line of influence can thus be drawn from Eisenheim to the garden cities and reform architecture projects of around 1900, and on to the municipal social housing programs of the 1920s and 30s.[74]

Ebenezer Howard's hopes of finding a compromise between rural and urban lifestyles were high. The garden city was to be a remedy for poverty, rural-urban migration, agrarian market crises, unhealthy living conditions, and air pollution. In his book, he developed a detailed template for planning a garden city. Acknowledging the many older lines of thought by which he was inspired, from land reform through romantic and life-reform ideas to philanthropic plans to fight poverty by giving the poor access to land, he called his scheme a "unique

69 Ibid., 58.

70 Gertraud Koszteczky, Die Geschichte der Wiener Grünflächen im Zusammenhang mit dem sozialen Wandel ihrer BenützerInnen, unprinted doctorate thesis, University of Vienna 2007, 84.

71 Nilsen, Allotment Gardens, 12. After World War I, the German garden architect Leberecht Migge strongly opposed this preoccupation with the recreational and aesthetic values of public parks and advocated for subsistence gardening plots as a tool for social change; Leberecht Migge 1881–1935. Gartenkultur des 20. Jahrhunderts, Kassel 1981, 90–94; David H. Haney, When Modern was Green: Life and Work of Landscape Architect Leberecht Migge, London et al. 2010, 104–105.

72 Koszteczky, Geschichte, 84. For a detailed account of the development and efficiency of allotment gardens as poor relief in the nineteenth century, see Nilsen, Allotment Gardens.

73 Ebenezer Howard, Garden Cities of To-morrow, London 1902; a shorter version had previously been published in 1898.

74 Honhart, Company Housing, 4. On the development of the garden city movement and the role of German and English company housing projects and model villages, see also Nilsen, Allotment Gardens, 13–14, and Mettele, Garten.

combination of proposals".[75] Among the authors he cited were John Ruskin, William Blake, Thomas Spence, Herbert Spencer, and Leo Tolstoi. Equating cities with "human society" and the countryside with "nature", he stipulated that both needed to be "married" in order to overcome the present "unholy, unnatural separation of society and nature".[76]

A schematic illustration of the ideal garden city showed a park providing "ample recreation grounds" at the centre of the settlement, surrounded first by public buildings, then a glass arcade housing various shops. Next, forming concentric rings, came first the residential buildings (some of which would have "common gardens" and co-operative kitchens); then more parks and playgrounds, schools and churches. The outer circle of the city would house factories, which according to Howard would cause no air pollution as they were to be entirely powered by electricity. The surrounding land would be devoted mostly to market-oriented farms, but also to "labourers' allotments". The currently "despairing producer of wheat"[77] would be saved by the good market opportunities the garden city was to provide both locally and through its excellent rail connections, which would allow a broad range of export-oriented production both for farmers and factories. The fertility of the soil would be preserved by recycling all the settlement's waste using a modern and hygienic sewage system.[78]

The garden city would be built on agricultural land purchased through a mortgage-backed loan by four reliable trustees. These would collect a moderate ground rent from all residents through which both the loan and public expenses (including a broad range of welfare institutions) would be met. The land's rise in value resulting from its development would help to finance its purchase; as soon as it was free of debt, the land would be communally owned by all residents. This collective ownership, together with a democratic self-governance system, would enable the long-term preservation of the green spaces: when the garden city reached around 32,000 inhabitants, its further growth would not be allowed to consume the fields and parks, as it inevitably would within a profit-driven private real-estate market. Instead, the settlement's further growth would be directed towards new garden cities forming satellites beyond the mother city's green borders.[79] These considerations demonstrate Howard's acquaintance with contemporary land-reform theories.[80]

The criteria most valued by Howard, namely light, air, hygiene, and opportunities for healthy and morally unproblematic leisure pastimes, mirrored a middle-class preoccupation with avoiding the filth, the lack of space, sunlight, and air, the bad smells, and the perceived moral pitfalls that struck the bourgeois visitor to contemporary slums. They also bespoke the momentum the life-reform movement had gained. Compared to parks, alleys, and professional farming enterprises, kitchen gardens as a means of subsistence production played a less prominent role in Howard's concept.

75 Howard, Garden Cities, 71.
76 Ibid., Introduction (without pagination).
77 Ibid., 12.
78 Ibid., 6.
79 Ibid., 93–95.
80 On land-reform theories and campaigns in England, see Nilsen, Allotment Gardens, 21–22.

The organisation of gardening and agriculture in Herrnhut, Königsfeld, Eden, and Loheland

This section will present four examples of other "model villages" which represent a wide range of ideological motivations and socio-economic backgrounds, yet faced some similar challenges in their agricultural organisation. These challenges included gaining and securing access to land, generating a meaningful complement to monetary incomes from subsistence production, and organising housing and green spaces to fit their communal needs and aspirations.

A much earlier predecessor to the way Eisenheim was strategically founded on agricultural land of mostly lesser quality, and on a property far too small to enable inhabitants to live as farmers, can be seen in early modern protoindustrial settlements. Like Eisenheim, these were often built within the boundaries of existing villages. In some respects, the Moravian Church's famous first community at Herrnhut can be seen as a particularly well-documented example of an early modern pre-industrial settlement, as well as an example for a religiously motivated utopian community project. Herrnhut was founded in 1722 at the manor of count Nikolaus Ludwig Zinzendorf in Upper Lusatia to house Moravian religious refugees. Most of them had formerly been farmers or farm workers; now they became weavers or spinners, supporting themselves through a combination of home industry, crafts, subsistence gardening, and small-scale animal husbandry.[81] Maps from 1717 and 1760 show how the new settlement was inserted into the fields of the village of Berthelsdorf, with Herrnhut much smaller and more densely built.[82] Initially, all land remained part of Zinzendorf's allodial property: a traditional custumal (*Dorfrüge*) codified the inhabitants' duties and privileges, including a permanent exemption from serfdom.[83] In 1760, ownership of the land was transferred to the Moravian Church, which also owned all community buildings; most family houses and businesses were privately owned.

Town maps from 1722, 1769 and 1858 show a settlement pattern that is comparable to Eisenheim in certain respects: rows of townhouses, each with garden space in its backyard and some with an additional plot within one of the geometrically divided gardening areas surrounding the settlement.[84] By the second half of the eighteenth century, Herrnhut was also home to factories and a number of shops and craft businesses. While Herrnhut's social struc-

81 For more information and references on the beginnings of Herrnhut, see Dietrich Meyer, Zinzendorf und die Herrnhuter Brüdergemeine 1700–2000, Göttingen 2009; Ines Peper, "Wir aber in der ganzen Gemeine durften einander trauen": Vom mährischen Geheimprotestantismus zur Herrnhuter Brüdergemeine, in: Thomas Wallnig et al. (eds.), Maria Theresia? Neue Perspektiven der Forschung, Bochum 2017, 67–86.

82 Institut für vergleichende Städtegeschichte Münster (ed.), Deutscher Historischer Städteatlas 3: Herrnhut und Herrnhuter Siedlungen, Münster 2009, Tafel 2: Das Rittergut Berthelsdorf 1717 und 1760, 1:20.000; Birgit Schulte, Die schlesischen Niederlassungen der Herrnhuter Brüdergemeine Gnadenberg, Gnadenfeld und Gnadenfrei. Beispiele einer religiös geprägten Siedlungsform im Wandel der Zeit, Insingen 2008, 31–32.

83 Printed transcription in: Joseph Theodor Müller, Zinzendorf als Erneuerer der alten Brüderkirche (orig. 1900), in: Erich Beyreuther (ed.), Erster Sammelband über Zinzendorf (Nikolaus Ludwig von Zinzendorf, Materialien und Dokumente / Reihe 2:, Nikolaus Ludwig Graf von Zinzendorf, Leben und Werk in Quellen und Darstellungen, vol. 12), Hildesheim/New York 1975, 1–124, 62–64; online transcription: http://herrnhut.blogspot.co.at/2009/04/die-statuten-von-1727.html (last visited in May 2019).

84 Deutscher Historischer Städteatlas 3, Tafel 1: Grundriss 1769 und 1858; ibid., Tafel 4a: Topographische Entwicklung, Bebauung 1722 bis 1858.

ture was far more varied than Eisenheim's and included many middle-class families, almost all households still retained their own gardens and their additional garden plots in 1858, suggesting that subsistence gardening still played a role in their economies. While the sources consulted for this essay allow no conclusions regarding community building through gardening activities, it can be noted that the spiritual concept of community within the Moravian Church is steeped in agricultural symbolism. Easter liturgy as the most important celebration of the year assembles the whole community at sunrise at the cemetery or *Gottesacker* ("God's acre"), which features prominently in the topography of all settlements.[85]

A later example for a Moravian Church community would be Königsfeld in Württemberg, which was founded in 1806. The Moravian Church purchased an entire farm comprising 69 hectares of meadows, arable land, woods, a pond, buildings, and cattle. In comparison to Eisenheim, this was a large property.[86] All land remained in the hands of the church, while the family homes were mostly privately owned. Although the population was far more middle-class than that of Eisenheim, consisting predominantly of artisans and shopkeepers, subsistence farming and gardening were important. Not only were there kitchen gardens for every family, but during Königsfeld's early decades, the central square in front of the church was devoted to vegetable gardens, fruit trees, a cistern that served as the settlement's only source of drinking water as well as being used to breed edible fish, and a lawn for laundry-bleaching. Directly behind the church lay the barns and fields of the "choir" of unmarried women, who generated a considerable part of their collective income through agriculture until the end of the nineteenth century.

Around the same time that Königsfeld's unmarried women gave up farming, a group of Berlin vegetarians founded the settlement *Vegetarische Obstbau-Kolonie Eden* on the outskirts of Oranienburg.[87] Drawing on Tolstoian, *Lebensreform*, and land-reform ideas, Edeners saw vegetarianism, which at the time often resembled what would be called veganism today,[88]

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85 Schulte, Die schlesischen Niederlassungen, 39–41.

86 Brüdergemeinearchiv Königsfeld, Gründungsverträge, Purchase contract between the Moravian Church and the farmer Jacob Lehman, 10 Nov. 1804; Wolfgang Rockenschuh, Königsfeld: Beiträge zur Geschichte, Königsfeld 1999, 12–36.

87 The word "vegetarian" in the settlement's name was dropped in 1901 when the association decided to admit non-vegetarian members as well. In 1920, the name was changed to "Obstbausiedlung". On Eden today, see http://www.eden-eg.de/ (last visited in May 2019); Astrid Segert/Irene Zierke (eds.), Organisationsstrukturen und ökologisches Alltagsverhalten. Die Gemeinnützige Obstbau-Siedlung Eden eG als Fallbeispiel für nachhaltig orientierte Genossenschaften, Potsdam et al. 2000. For historical accounts, see also Christian Böttger, Zum Leben in den genossenschaftlichen Siedlungen "Eden" und "Falkenberg" von Beginn ihres Bestehens bis 1933. Eine vergleichende volkskundliche Untersuchung der Lebensweise und Kultur von Bewohnern zweier Siedlungen im Berliner Raum, Berlin 1993; Grit Marx, Der ökologische Gartenbau in der Obstbausiedlung Eden von den Anfängen bis zur Gegenwart, unprinted master's thesis, HU Berlin 1998; Heide Hoffmann/Grit Marx, Die Entwicklung des Ökologischen Gartenbaus in der Obstbausiedlung Eden, in: Heide Hoffmann/Susann Müller (eds.), Vom Rand zur Mitte. Beiträge zur 5. Wissenschaftstagung zum Ökologischen Landbau, Berlin 1999, 345–349; Hermann Kaienburg, Der Traum vom Garten Eden. Die Gartenbausiedlung Eden in Oranienburg als alternative Wirtschafts- und Lebensgemeinschaft, in: Zeitschrift für Geschichtswissenschaft 52/12 (2004), 1077–1090; Joachim Scholz, Haben wir die Jugend, so haben wir die Zukunft. Die Obstbausiedlung Eden/Oranienburg als alternatives Gesellschafts- und Erziehungsmodell (1893–1926), Berlin 2002.

88 For instance, many of the dietary plans in the German *Vegetarierbund*'s journal were completely vegan; others contained milk and butter as their only animal products: Vegetarische Warte. Zeitschrift für naturgemäße Lebensweise und Gesundheitspflege 32 (1899), 8–9, 44. At least during its first years, the Eden grocery shop seems to have stocked plant-based products only: Eden Archiv (Oranienburg), Mappe Regeno-Raiffeisen,

as a healthy and "natural", but also ascetic lifestyle that required them to give up "shallow" entertainment, luxurious clothing, coffee, alcohol, and smoking. This would lead to a nobler human condition ("wahrem und edlem Menschentume")[89] while also saving money. By combining gardening and the cultivation of fruit trees with a frugal lifestyle and co-operative self-organisation, early Eden inhabitants sought economic self-help, while at the same time aiming at creating a model for social reform.[90] Eden assembled workers, artisans, urban professionals, and intellectuals, and among them a broad range of political convictions, from socialists like Franz Oppenheimer to adherents of land or monetary reform like Silvio Gesell and proponents of racist, eugenic, and *völkisch* notions like Gustav Simons.[91]

On 12 July 1893, the Eden association had bought 160 *Morgen* (40 hectares) of land at the comparatively cheap price of 225 Marks per *Morgen*.[92] Following the merchant Bruno Wilhelmi's plan,[93] the greater part of the land was divided into 85 parcels of about 2,800 m^2 each for homesteads (*Heimstätten*), the rest retained for collective use.[94] Tenancy leases forbade all commercial activities connected to meat production or sale, but allowed the keeping of dairy animals (probably mostly goats) and poultry.[95] More land was bought in 1905 and 1907, bringing the total to around 55 hectares; by then, far smaller homesteads (starting at 800 m^2) were also being offered.[96] All homesteads were leased from the association via *Erbpacht* or *Erbbaurecht* contracts;[97] to make them affordable even for the "poorest" tenants, the deposit of 500 Marks (in 1893) could be paid in rates as low as 1 Mark per week. Gardening and fruit

nos. 35 and 36: price sheet of the *Konsum-Verein und Versandabteilung* for November 1894. One of the reform food products produced in Eden from 1908 onwards was a margarine consisting purely of vegetable oils (*Eden Reform Butter*). On the German vegetarian movement of the time, see Judith Baumgartner, Vegetarismus, in: Diethart Kerbs/Jürgen Reulecke (eds.), Handbuch der deutschen Reformbewegungen 1880–1933, Wuppertal 1998, 127–139.

89 Eden Archiv (Oranienburg), Mappe Regeno-Raiffeisen, no. 1: "Die Ziele der Vegetarischen Obstbau-Kolonie Eden (e.G.m.b.H.) zu Oranienburg" (handwritten, without author and date).

90 The wide range of occupations can be seen in the early membership lists, which also included several women as members of the association, although never in leading positions: Eden Archiv (Oranienburg), Mappe Regeno-Raiffeisen, nos. 3, 4, 25. In his draft for an application for a state loan to build houses, a representative of Eden (probably Bruno Wilhelmi) argued that the diversity of educational backgrounds of the members would help to bridge the gap between social classes and contribute to efforts at popular education: ibid., no. 31, written on the back side of a 1894 advertisement.

91 On *völkisch* ideas as well as on ideological diversity within Eden, which also housed socialists, pacifists, and anarchists until 1933, see Ulrich Linse, Völkisch-rassische Siedlungen der Lebensreform, in: Uwe Puschner et al. (eds.), Handbuch zur "Völkischen Bewegung" 1871–1918, Munich et al. 1996, 397–411, 398–401.

92 Karl Bartes et al., Die Obstbausiedelung Eden, eingetragene Genossenschaft mbH in Oranienburg in den ersten 25 Jahren ihres Bestehens, Oranienburg 1920, 4.

93 Wilhelmi advertised for his idea of founding a fruit-growing co-operative: Bruno Wilhelmi, Aufforderung und Plan zur Gründung einer Obstbau-Kolonie zu Berlin, in: Vegetarische Rundschau 13/5 (1893), 141–142 (quoted in Böttger, Leben, 140–141).

94 Böttger, Leben, 43.

95 Ibid., 71; goats grazing on Eden's sodded paths are mentioned in Otto Willkommen, Bodenwirtschaft in Eden, in: Bartes et al., Obstbausiedelung, 47–54, 49; for details of leasing contracts, see Böttger, Leben, Anlage 3 and Edener Mitteilungen 28/5–6 (1933), 110–111.

96 Böttger, Leben, 70. Today, Eden covers around 120 hectares: Marx, Gartenbau, 22.

97 *Erbpacht* 1893–1906 and 1919–1923; *Erbbaurecht* 1906–1919 and after 1923. The main difference was that under the latter, privately owned houses could not be claimed by creditors in case of the association's bankruptcy: Böttger, Leben, 70; Otto Jackisch, Zur Einführung des Erbbaurechtes an Stelle des Erbpachtverhältnisses in "Eden", in: Edener Mitteilungen 1/1 (1906), 2–9.

growing on the homesteads was obligatory, and failure to do so could lead to expulsion.[98] These property and land-use regulations were intended to secure Eden's green spaces in spite of ongoing nearby city growth, and in fact successfully did so.

The site had been selected for its affordability and proximity to Berlin, but against the advice of professional gardener August Hanke:[99] it was extremely sandy, poor in nutrients, and prone to night frosts late into the year. These adverse conditions nearly led to financial failure in the settlement's early years as the newly planted fruit trees did not produce the expected yield.[100] After extensive fertilisation and much learning by trial and error, however, revenues began to increase, especially when the Edeners began processing their surplus fruit in the early 1900s and marketing fruit preserves and other vegetarian products all across Germany.[101] In the 1890s, large quantities of mineral fertiliser (chalk, potash, ammonia, phosphate) were used in addition to Berlin street cleaning waste, Oranienburg sewage sludge, and "Hensel's Mineraldünger"; after a few years of this treatment, compost and green manure sufficed to maintain soil fertility.[102] In an interesting parallel to today's permaculture concept of the so-called food forest,[103] many of the Eden orchards employed a tiered system of higher and lower fruit trees interspersed with berry bushes and strawberries.[104]

Concerning Eden's once vibrant community life, its basic structure of single-family houses surrounded by private gardens and high hedges has been cited as one reason for the loosening of community ties since the 1950s,[105] when the co-operative businesses as well as many of the former collective leisure activities ceased to provide constant opportunities of everyday interaction.

The final example to be cited here is the women's school settlement of Loheland in the Rhön mountains near Fulda in Hesse. The location was rural, but Loheland's connections to avantgarde urbanity were strong: teachers and students came predominantly from urban middle-class families. The students were young women who received training as professional gymnastics teachers as well as an artistic education and an introduction to farming and gardening during their two-year curriculum at Loheland. The project's realisation with hardly any starting capital succeeded only thanks to the founders' ability to negotiate their urban networks in order to mobilise investors and tap markets for their artisanal products, which equalled those of the contemporary *Bauhaus* schools in terms of their modernity and

98 Wilhelm Schröder/Paul Schirrmeister/Friedrich Zerndt, Obstbaukolonie Eden, in: Vegetarische Warte 30/10 (1897), 272–273; Bartes et al., Obstbausiedelung, 52–53.

99 Marx, Gartenbau, 22.

100 Böttger, Leben, 83–87; Marx, Gartenbau; Willkommen, Bodenwirtschaft. Detailed accounts of the association's returns were regularly published in the *Vegetarische Warte*.

101 Segert/Zierke, Organisationsstrukturen, 12.

102 Marx, Gartenbau, 29. The founding members had initially placed great hope in "Hensel's Mineraldünger", a brand of stone meal developed by Julius Hensel, since they wanted to avoid animal manure (Archiv Eden, Mappe Regeno-Raiffeisen, no. 6, invitation to the founding meeting on 28 May 1893). The product was soon abandoned due to its lack of certifiable benefit, however: Marx, Gartenbau, 29. On comparable fertilising practices in Germany around 1900, see ibid., 13–17.

103 Mollison, Handbuch, 77–79; https://permacultureapprentice.com/creating-a-food-forest-step-by-step-guide/ (last visited in May 2019).

104 Willkommen, Bodenwirtschaft, 49. On a historical plantation plan displayed in the Eden archive's permanent exhibition, this system is called "Baumquartiere mit Beerenzwischenpflanzungen Werder'scher Art", referring to the traditional fruit-growing town of Werder in Brandenburg.

105 Segert/Zierke, Organisationsstrukturen, 67, 165.

quality. Gardening and agriculture were integral parts of the Loheland pedagogical concept and curriculum and were declared as such in the association's statutes.[106]

On 30 May 1919, Luise Langgaard and Hedwig von Rohden bought around 45 hectares of land (heather, woods, and arable) in the name of their association *Bund für klassische Gymnastik* (later *Lohelandbund*) from the farmer Ludwig Homburg[107] by way of a mortgage loan (a scheme that remotely resembled the one promoted by Howard).[108] A report by the agronomist Albert Sviering reached them only after the contract was signed.[109] In it, Sviering had denounced their yield expectations for the property (in terms of rye, potatoes, vegetables, and firewood) as unrealistic and soil quality in the region as inferior. In the following years they bought more land, bringing the property to a size of 54 hectares.[110] Subsistence production of food was integral for feeding the school in the postwar years, although similarly to experiences in Eden, the founders of Loheland also required several years of learning and experimentation before their agricultural aspirations could be fully realised.

By the 1920s, Loheland housed cows, chickens, turkeys, workhorses, and pigs.[111] In 1927, all gardens and fields were converted to biodynamic farming methods except for two plots which were cultivated conventionally for comparative purposes. Led by Loheland gardener Marie Lohrmann, systematic experiments to develop biodynamic farming further were conducted; some of their results were published, thereby making Lohelanders join the ranks of organic farming pioneers.[112] Many methods that are still prominent in discussions of ecologically sustainable agriculture today were utilised and experimented on in Loheland: from green manuring with lupines, composting, and cold frames to beekeeping and extensive efforts at bird protection – in 1928 alone, 150 nesting holes for starlings and chickadees were installed.[113]

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106 On the economic development of Loheland see Ines Peper, "Wir, jeder Einzelne von uns, sind der Bund". Zur Gemeinwohlorientierung der Loheländer Wirtschaftsweise in den beiden Anfangsjahrzehnten, in: Ines Peper/Iris Kunze/Elisabeth Mollenhauer-Klüber (eds.), Jenseits von Wachstum und Nutzenmaximierung: Modelle für eine gemeinwohlorientierte Wirtschaft, Bielefeld 2019, 109–134. On the role of gardening and agriculture for Loheland's pedagogical concept see Anja Christinck/Thomas van Elsen (eds.), Bildungswerkstatt Pädagogik und Landwirtschaft, Conference Documentation, 25–26 Oct. 2008, Künzel 2009.

107 Archiv der Loheland-Stiftung (Loheland), Ordner "Unterlagen aus dem wirtschaftlichen Werdegang": purchase contract, dated 30 May 1919 (copy); ibid., "Kreis Fulda Handzeichnung nach der Katasterkarte von einem Teile der Gemarkungen Dassen, Dirlos und Pilgerzell", dated Fulda, 3 May 1921: cadastral plan (the site is marked "Bund für Klassische Gymnastik e.V. in Berlin").

108 "Der Gesamtkaufpreis ist auf dem Grundstück als Hypothek eingetragen"; Archiv der Loheland-Stiftung, D-1-1 15: Prospectus of the "Loheland Schule für Körperbildung, Landbau und Handwerk", Fulda 1920, 14.

109 Archiv der Loheland-Stiftung, Bauakte, Gutachten Albert Sviering, 14 July 1919 (copy).

110 http://www.loheland.de/index.php?id=loheland-archiv-geschichte&L=1Maren (last visited in May 2019).

111 Drei Frauen – drei Geschichten. Perspektiven auf die frühe Siedlungsgemeinschaft Loheland. Herta Dettmar-Kohl, Imme Heiner und Elisabeth Hertling erzählen, Fulda 2012, 177–178.

112 Marie Lohrmann, Mondphasenversuche mit Kopfsalat, in: Demeter 6/1 (1931), 3–6. On Loheland's role as a pioneer for organic farming, see Heide Inhetveen et al., Loheland – lebensreformerische Fraueninitiative und ökologische Forschungsstätte, in: Jürgen Heß/Gerold Rahmann (eds.), Ende der Nische. Beiträge zur 8. Wissenschaftstagung Ökologischer Landbau, Kassel 2005, 427–428; Heide Inhetveen et al., Pionierinnen des Ökologischen Landbaus. Herausforderungen für Geschichte und Wissenschaft, in: Bernhard Freyer (ed.), Ökologischer Landbau der Zukunft. Beiträge zur 7. Wissenschaftstagung Ökologischer Landbau, Vienna 2003, 427–430.

113 Archiv der Loheland-Stiftung, Gartenarchiv: Anonymous [probably Maria Lohrmann], Jahresbericht 1928 über Versuche nach biologisch-dynamischen Wirtschaftsmethoden in der Gärtnerei Loheland (photocopy

Loheland's open spatial structure without any private gardens has been cited as beneficial for the settlement's atmosphere and its concept of integrating community and landscape.[114]

Conclusion

Urban gardening in nineteenth-century Eisenheim fulfilled several of the aspirations connected to urban gardening today: Eisenheim's working-class residents were able to improve their level of food security as well as the quality of their diets through subsistence gardening and the keeping of livestock like pigs, chickens, ducks, goats, sheep, or geese. While the provision of gardening land and barns was initially reserved for higher-ranking workers and their families, the Gutehoffnungshütte soon offered these facilities to all residents in order to stabilise its workforce. All evidence shows that access to these "resources of subsistence labour" was highly valued by the workers. The high relevance of subsistence agriculture for improving the inhabitants' food security was also evident in all other settlements presented in this paper, regardless of whether the respective founders considered subsistence gardening an obvious part of everyday life (as in Herrnhut and Königsfeld) or a means of social reform (as in Eden and Loheland).

In Eisenheim, centralised landownership by the company kept the land and buildings off the real-estate market for over a century and preserved the original layout and architecture as well as the intended land-use regime until the 1970s; then the settlement was protected by the residents themselves and broader civil society engagement until it was finally declared a protected monument by state authorities. In Herrnhut, access to land and a stable land-use regime were first achieved through the traditional legal regulations between manorial landlord and village, then through collective ownership of all land by the Moravian Church, as was the case in Königsfeld. Eden and Loheland organised collective landownership through co-operative associations which ensured the communities' intended land-use regimes by way of detailed regulations in their statutes. It is noteworthy that in all four cases the longevity of their land-use regimes was neither based on private nor public landownership, but on institutions for collective action.

Systematic sociological research conducted in Eisenheim in the 1970s has highlighted the settlement's interweaving of public, semi-public, and private spaces, and the important role of outdoor subsistence activities like gardening and DIY crafts as fundamental for maintaining and strengthening community ties. This line of research still seems highly relevant today since community building has become one of the foremost aims of urban gardening initiatives and theory. For the other settlements discussed in this paper, only anecdotal evidence for a similar interrelatedness of spatial organisation and social relations exists; this, however, seems to fit well with the Eisenheim findings.

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of a typewritten text), 1, 4 on bird protection, 1–13 on fertilizing methods and yields. I thank Elisabeth Mollenhauer-Klüber for the information that this text was also published as: Mitteilungen des Landwirtschaftlichen Versuchsringes der Anthroposophischen Gesellschaft 4/2 (1929). Early photographs in the Archiv der Loheland-Stiftung, Gartenarchiv, show the utilization of cold frames.

114 Elisabeth Mollenhauer-Klüber, Freiraum Loheland, in: maybrief 47 (2017), 33–35, 33.

Due to their rural origins, agricultural knowledge and skills were no issue for Eisenheim's residents, who also seem to have been entirely trusted by the Gutehoffnungshütte to make good use of the land. The same was true for Herrnhut and Königsfeld, while the founders and early inhabitants of Eden and Loheland reported rather steep learning curves in their first agricultural efforts, as many of them had not acquired these skills in their urban and often middle-class prior lives. Yet (and perhaps not surprisingly) they approached gardening with far higher expectations of its potential for social reform, often already intensely discussing topics that continue to play an important role in today's gardening discourses: nutrient cycles, composting, green manure and other aspects of soil health, beekeeping and bird protection as ecological measures, (a traditional form of) forest gardens, cold frames, organic agriculture, and more.

Åsa Ahrland

Fields, Meadows, and Gardens – an Integral Part of the City

The Example of Södermalm in Stockholm, Sweden

Abstract: As an increasing number of people live in towns and cities all over the world, the development of urban areas attracts attention. Urban planning in relation to quality of life and a sustainable society is on the political agenda and in the public eye. When it comes to food, modern towns and cities are today defined by consumers rather than producers. The urban agriculture movement is therefore often perceived as a new way to meet the needs of city life. However, throughout history towns and cities have had a high degree of self-sufficiency. It is often assumed that nineteenth-century rectilinear town planning was the main factor in bringing urban agriculture to an end. This study shows that in Södermalm, a central part of Stockholm which for a long time was characterised by a mix of industrial production, trade, craft, and cultivation, the fields did not disappear until after World War II. The view that agriculture was no longer compatible with modern city life and the concept of a green city constituted by parks and other green spaces as part of urban planning were connected to the interpretation of modernity in the Swedish welfare state, with its emphasis on rationality and efficiency, which lead to a dichotomy between urbanity and rurality.

Key Words: urban agriculture, urban gardening, modernity, welfare state, Stockholm

As an increasing number of people now live in towns and cities all over the world, urban areas and their development have attracted a great deal of attention in recent years. Questions of how urban areas should be planned, whether planning should be according to the principles of urban sprawl or rather a matter of densification, have been widely discussed among citizens, academics, and planners. The urban environment in relation to quality of life and different aspects of a sustainable society is also on the political agenda and in the public eye. Today planning seems geared towards more compact cities as a response to larger urban populations and the space for green areas, public as well as private, is limited.[1] So the core

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1 See for instance Rob Roggema, Towards Fundamental New Urban Planning for Productive Cities: the Quest for Space, in: Second International Conference on Agriculture in an Urbanizing Society, Reconnecting Agriculture and Food Chains to Societal Needs, 14–17 Sept. 2015, Rome, Italy. Proceedings of the Conference 2015, 179–180 note 3.

of the matter is what is an urban environment? Apart from perhaps obvious aspects such as a densely occupied area with access to a variety of goods, services, and work opportunities, the answer seems elusive. The complexity is mirrored in the amount of research analysing and interpreting urban areas and urban life in demographic, economic, political, social, and cultural terms. One frequently discussed topic is the rural-urban divide. Though such views are challenged today, not least from a planning perspective, traditionally "urban" and "rural" have been seen as a dichotomy, with urban life centred around commerce and manufacturing and rural life focused on cultivation and management of land.[2] Another aspect that has been put forward is the impact of new and altered urban consumption patterns emerging in the late twentieth century as a result of gentrification processes and a renewed interest in urban life, while there was a decline in industrial production within urban areas. The sociologist Sharon Zukin, for instance, wrote in the 1990s that "cities are no longer seen as landscapes of production, but as landscapes of consumption".[3] When it comes to food, towns and cities are today certainly made up of consumers rather than producers.

Urban agriculture comes in many shapes and forms, but essentially involves cultivating, processing, and distributing food in or around a town or city and is often associated with social, economic, and ecological sustainability. Among its many benefits individual well-being and health are also mentioned. Urban agriculture can be organised by individual citizens, groups, companies, or city authorities. It also includes more radical approaches such as guerrilla gardening, which could be defined as illicit horticultural cultivation in neglected public spaces as well as "non-places", that is, places that are forgotten and not cared for. All these forms of producing plants, vegetables, berries, fruit, honey, eggs, or similar products are often looked to as representing a different way of life in the cityscape and a new way to meet the needs of urban life.[4] The surge of interest during the last decades from authorities, organisations, and communities leading to various projects and media coverage may have reinforced the sense of novelty. The academic enthusiasm for the topic resulting in books, articles, and reports occasionally also contributes to this perception.[5]

However, towns and cities have had a high degree of self-sufficiency throughout history. This is certainly the case in Sweden, where studies show that urban agricultural production, particularly that of cereals and later also potatoes, was substantial in many towns in the pre-industrial era, and dependency on the countryside's food production varied considerably between towns.[6] Even on a local household level the degree of self-sufficiency could be high. This often included horticultural production on plots within the town walls as well as outside them in the town land, meaning the fields, meadows, and garden plots that surrounded the

2 Alistair Scott et al., The Rural-Urban Divide. Myth or Reality?, in: Socio-Economic Research Group (SERG) Policy Brief 2 (2007), 1–27.

3 Sharon Zukin, Urban Lifestyles. Diversity and Standardization in Spaces of Consumption, in: Urban Studies 35/5–6 (1998), 825–839, quotation on page 825.

4 See for instance Chiara Tornaghi, Critical Geography of Urban Agriculture, in: Progress in Human Geography 38/4 (2014), 551–567; Michael Hardman/Peter J. Larkham, Informal Urban Agriculture: The Secret Lives of Guerrilla Gardeners, Cham et al. 2014.

5 For instance, Hardman/Larkham, Informal Urban Agriculture, 16, claim that: "Whilst the practice of gardening in the urban has been around for centuries (Schofield 1990), the idea of farming within a city is a relatively new concept, at least in the Western hemisphere (Nasr et al, 2013, Mougeot 1999, Viljoen et al 2005)."

6 Annika Björklund, Historical Urban Agriculture. Food Production and Access to Land in Swedish Towns before 1900, Stockholm 2010, 100–103, 151–154.

towns. In addition, archaeological studies in recent years have found many traces of gardens and gardening activities in urban contexts in Sweden dating from the medieval period and onwards, which indicates much greener and more productive towns than has hitherto been assumed.[7] Farming and horticultural production have evidently been an important and ubiquitous element in the urban fabric of medieval and early modern towns, also in Scandinavia.

The meanings of the concepts of "urban" and "rural" in an historical perspective have attracted considerable attention among scholars during the last decades. Similarities, differences, and the relation between the two have been questioned and problematised, as has the concept of urbanisation, and a more multifaceted image is emerging.[8] In medieval Sweden a town could indeed be very small. Sometimes not more than an aggregation of eight farms and a church was needed to obtain a town charter, while there were other places that never obtained formal urban privileges but had similar functions to a town.[9]

So, when did the perception of urbanity and city-dwellers change, and why? It often seems to be assumed that the shift was a consequence of industrialisation in the nineteenth century, when people migrated in large numbers from rural areas to work in the rapidly growing cities, centred on commerce, trade, and industry. The social movements that demanded urban reform around the year 1900 pointed to the disorder, congestion, and sanitary problems arising from expansion and speculation, and called for more attention to be paid to human health and quality of life, provision of amenities, and social equity.[10] People's lack of opportunities for garden cultivation and recreational outdoor life in industrialised cities was decried. Allotment gardens and garden cities were introduced as concepts bringing something new to improve life particularly for the working classes, but also for urban dwellers in general.

These movements thus conveyed a rather grey and distressing image of urbanity in the nineteenth century, which of course to a large extent was true. In Stockholm too, with its rapid industrialisation and urbanisation, the increase in population resulted in congestion, poor housing, and social and environmental problems. However, despite this development, as we will see, there were still farms and large areas of pasture and arable land within the city boundaries. For a long time, industrial enterprise and urban agriculture seemed, in a city like Stockholm, to be compatible. The major shift did not really come until the introduction

7 Karin Lindeblad/Annika Nordström, Trädgårdsarkeologi i medeltida och tidigmoderna städer, in: Anna Andréasson et al. (eds.), Källor till trädgårdsodlingens historia. Fyra tvärvetenskapliga seminarier 2010–2013 arrangerade av Nordiskt Nätverk för Trädgårdens Arkeologi och Arkeobotanik (NTAA), Alnarp 2014, https://pub.epsilon.slu.se/12372/ (published 16 June 2015, last visited 21 Aug. 2019), 31–45.

8 See for example Sven Lilja/Peter Clark (eds.), Small Towns in Early Modern Europe, Cambridge 1995; Stephen R. Epstein (ed.), Town and Country in Europe, 1300–1800, Cambridge 2001; Åke Sandström, Ploughing Burghers and Trading Peasants. The Meeting Between the European Urban Economy and Sweden in the Sixteenth and Seventeenth Centuries, in: Finn-Einar Eliassen et al. (eds.), Regional Integration in Early Modern Scandinavia, Odense 2001, 95–105; Søren Bitsch Christensen/Jørgen Mikkelsen (eds.), Danish Towns during Absolutism. Urbanisation and Urban Culture in Denmark 1660–1848, Århus 2007; Björklund, Historical Urban Agriculture; Hans Andersson, Urbanization, Continuity and Discontinuity, in: Irene Baug et al. (eds.), Nordic Middle Ages – Artefacts, Landscapes and Society. Essays in Honour of Ingvild Øye on her 70th Birthday, University of Bergen Archeological Series (UBAS) 8/15, Bergen 2015, 21–31.

9 Martin Hansson, Småstäder och andra orter i senmedeltidens Småland, in: Meta historiskarkeologisk tidskrift (2017), 73–84, 76–77, 79–81.

10 Susan Fainstein, Urban Planning, Encyclopædia Britannica, https://www.britannica.com/topic/urban-planning/The-era-of-industrialization (published 12 May 2016, last visited 20 Aug. 2019).

of the welfare state and its interpretation of modernity. I will illustrate this by looking at the development of Södermalm, a part of the Swedish capital characterised by both industry and urban agriculture well into the 1900s, when fields and gardens were replaced by wide streets and apartment buildings. The aim is to clarify what factors were important for maintaining cultivation within the city's boundaries, and when and why fields, meadows, and gardens eventually disappeared.

From grey disorder to green planning?

Before looking more closely at the development of Södermalm, I would like to dwell a little longer on the situation around the turn of the twentieth century. This was a period of great optimism and a sense of the beginning of a new era. There was a general confidence in the future and the possibilities that lay ahead in a modern world. However, industrial society and the situation of workers were also criticised. The Arts and Crafts movement artist and socialist William Morris was one of these voices. In his novel *News from Nowhere* from 1890, he describes an English Utopia at the beginning of the twenty-first century, where people have freed themselves from the burdens of industrialisation and live in harmony with the natural world in an egalitarian society. London is no longer dirty, crowded, and dominated by slums where people lead pinched and sordid lives, but a pastoral idyll full of small houses and beautiful gardens with flowers, vegetable-plots, fruit-trees, and singing birds, where city-dwellers have more or less turned into country people. As we can see, Morris outlines the concept of a garden city, but he does not stop there. According to *News from Nowhere,* the whole of England is at this point turned into "a garden, where nothing is wasted and nothing is spoilt, with the necessary dwellings, sheds, and workshops scattered up and down the country, all trim and neat and pretty."[11] The idea of a garden city was further developed by Ebenezer Howard in his treatise *Tomorrow: a Peaceful Path to Real Reform*, published in 1898, in which he illustrates the garden city in a diagram with a large park at the centre, surrounded by dwellings with adjacent gardens and workplaces in the periphery, all enclosed by a belt of agricultural land.[12] The following year Howard founded the Garden City Association, and in 1903 he started the garden city project of Letchworth north of London. Despite the goal of providing blue-collar workers a good life with decent housing and recreational gardens including vegetable plots, in the end the prices were not affordable for these groups. Instead Letchworth and other garden cities and garden suburbs became predominately middle-class areas.[13]

The concept soon spread to the continent. One interesting example is Gartenstadt Hellerau outside Dresden in Germany, a small model town created around the Dresdner Werkstätte furniture factory by its owner, Karl Schmidt-Hellerau. The architect Heinrich Tessenow was involved in producing affordable dwellings for the workers. His books *Der Wohnhausbau* (1909) and *Hausbau und dergleichen* (1916) show the intention to provide small and func-

11 William Morris, News from Nowhere or An Epoch of Rest, Being Some Chapters from a Utopian Romance, London et al. 1908, 93.

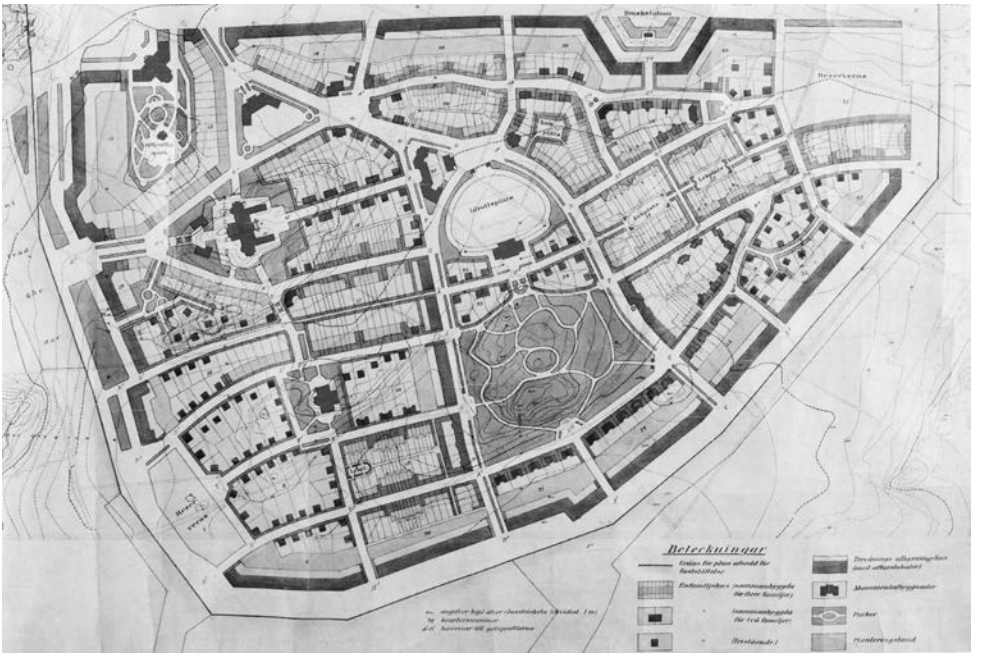
12 Ebenezer Howard, Tomorrow: a Peaceful Path to Real Reform, London 1898, 22–25.

13 Stanly Buder, Visionaries and Planners. The Garden City Movement and the Modern Community, Oxford/New York 1990, 84–95.

tional houses of high architectural quality, each with a smallish garden with a narrow patio, an area for growing vegetables and flowers, fruit trees, and facilities for keeping small livestock like hens and doves. They also provide photo documentation that these small cottage gardens were mainly used for subsistence cultivation.[14]

Gamla Enskede, south of Stockholm, was the first garden city in Sweden. The plan by the architect Per Olof Hallman from 1907–1908 (see figure 1) is dominated by different types of residential houses surrounded by gardens along gently curved streets. At the core of the area are a large park and a sports field, while along the periphery there are three-storey houses with shops and rental apartments, in front of which long narrow strips for cultivation are indicated. The aim was to help the working class with housing and the project was partly funded by the city. However, when it was built in the following years, the focus was mainly on detached houses with individual gardens instead of the proposed integrated model which the architect had envisioned, and as in so many other garden cities, it was primarily the middle class that moved in.[15]

Figure 1: Plan of Enskede 1907/08, the first garden city in Sweden.



Source: Per Olof Hallman 1907/08, Stockholms stadsbyggnadskontor, Public Domain, https://commons.wikimedia.org/wiki/File:Enskede_tr%C3%A4dg%C3%A5rdsstad_stadplan_1907.jpg.

14 Franziska Bollerey/Kristiana Hartmann, A Patriarchial Utopia. The Garden City and Housing Reform in Germany at the Turn of the Century, in: Anthony Sutcliffe (ed.), The Rise of Modern Urban Planning 1800–1914, New York 1890, 151–154; Didem Ekici, From Rikli's Light-and-Air Hut to Tessenow's Patenthaus: Körperkultur and the Modern Dwelling in Germany, 1890–1914, in: The Journal of Architecture 13/4 (2008), 379–406, 395–399.

15 Elisabeth Stavenow-Hidemark, Villabebyggelse i Sverige 1900–1925, Uppsala 1971, 307–312.

Allotment gardens were also strongly associated with the possibility to escape the grey city and its poor conditions in the nineteenth and early twentieth centuries. Garden plots formed part of a policy to improve the situation of working-class families living under poor conditions and suffering from inappropriate housing, malnutrition, and social neglect. The land for the plots was often provided by the local authorities, but projects could also be initiated by organisations and private employers.[16] Inspired by the allotment movements in Germany and Denmark, the first allotment gardens were laid out in the south of Sweden in Landskrona and Malmö in 1895. The movement spread quickly and in 1905 the first gardens were created in Stockholm. The well-to-do Social Democrat Anna Lindhagen was one of the major proponents of allotment gardens. In her book *Om koloniträdgårdar* (*On Allotment Gardens*), published in 1905, she writes about the ones she had seen in Malmö:

> "Only a few tenants have a kitchen garden on a large scale, most of the gardens here are exclusively small homely 'dens' among shrubs, roses, and flower borders, which later [in the season] often are lined with strawberries. In some gardens there are fruit trees, which yield crops."[17]

It is obvious from literature of the day that producing food was one aim, but the possibility of leading a meaningful life despite the unhealthy circumstances brought about by industrialisation was equally important. The Swedish garden writer and architect Rudolf Abelin conveys this view in the book *Koloniträdgården* (*The Allotment Garden*) from 1907, where he describes the allotment garden as a lively place where "streams of joyful words" and "bright feelings of hope" prevail. He continues to paint the scene:

> "Mother and children have gone there in advance, and when the steam whistle sounds or the bell tolls, the father hurries to some quiet hours in the care of his family and God's free nature, with a little refreshing work with the soil followed by supper. He feels free out there, he sees his children tumble about in innocent joy, and he is seized by bright dreams about the strength of the seeds and herbs, about a rich and tasty harvest."[18]

Abelin underlines the togetherness. The cultivation is an important aspect, but the quote also conveys the garden as a haven.

To conclude, new concepts such as allotment gardens and garden cities, introduced as a means of improving the living conditions in densely populated towns and cities, were known and implemented early on in Sweden, including Stockholm. However, it is important to keep in mind that the context was somewhat different from that in Britain, Germany, France, and other countries, where urbanisation had started much earlier and the number of inhabitants

16 Michel Conan, From Vernacular Gardens to Social Anthropology of Gardening, in: Michel Conan (ed.), Perspectives on Garden Histories, Dumbarton Oaks Colloquium on the History of Landscape Architecture, Washington D.C. 1999, 181–204, 196; Gunilla Englund/Sören Hallgren, Koloniträdgårdar, Stockholm 1974, 11–15.

17 Anna Lindhagen, Om koloniträdgårdar, Stockholm 1905, 28. Author's translation.

18 Rudolf Abelin, Koloniträdgården. En bok för stadsbor och industrisamhällen, Stockholm 1907, 17. Author's translation.

was much higher, which led to larger cities with larger problems. In the 1850s roughly 90 percent of the population of Sweden still lived in rural areas, the majority of them involved in farming. There was some early industrialisation, but it was centred in rural areas, the mining regions and forests in the north. Mostly due to decreasing child mortality, the population increased during the period from 1800 to 1870 by 77 percent, to 4.2 million inhabitants.[19] This eventually led to a situation in which people moved into towns and cities in order to find work, no longer being able to support their large families in the countryside. Urbanisation in Sweden began late, but advanced rapidly once it had started. In 1890, only two Swedes in ten lived in urban areas, whereas in 1935, half the population lived in towns and cities.[20] Stockholm had already started to grow around the mid-nineteenth century. At that time the capital had 93,000 inhabitants, by 1880 there were 169,000, and in 1900 the population had reached 300,000. This progression continued in the twentieth century. In 1930 there were around half a million inhabitants, and in 1980 almost a million.[21] As we can see, the population of Stockholm more than tripled from 1850 to 1900 and did so again from 1900 to 1980. Now it is time to take a closer look at the situation in Södermalm and how it has developed over time.

The early development of Södermalm

The name "Stockholm" first appears in the historical record in letters written by Birger Jarl and his son King Valdemar in 1252. The document gives no information about the appearance of the town, but the absence of a rectilinear city plan in medieval Stockholm seems to indicate spontaneous growth.[22] By the end of the fourteenth century, Stockholm had grown quickly to become not only the largest city in Sweden, but also the political centre with the royal residence. It comprised not only the small central island of Stadsholmen, meaning the Town Island, nowadays referred to as the Old Town, but was soon extended to include its surroundings. Stadsholmen was already densely populated in the Middle Ages, with hardly any room for gardens, let alone fields and meadows, so to incorporate the hinterland was necessary in order to survive. The island of Södermalm to the south, largely devoted to agricultural land except for areas where the terrain was too rocky or marshy, was important in supplying the citizens with provisions. In addition, a cluster of streets with mainly small wooden houses were built around the square by the bridge connecting the two islands. In connection with the ongoing large-scale redevelopment of the Slussen (sluices) area, remains of stone houses with evidence of a bourgeois material culture from as early as the sixteenth century have been found.

On a map from the early 1640s, we can see that the extent of the built-up area on Södermalm by then exceeded Stadsholmen in size, but that it still retained a rather medieval organic character (figure 2). However, this was soon to change, as the seventeenth century was a time

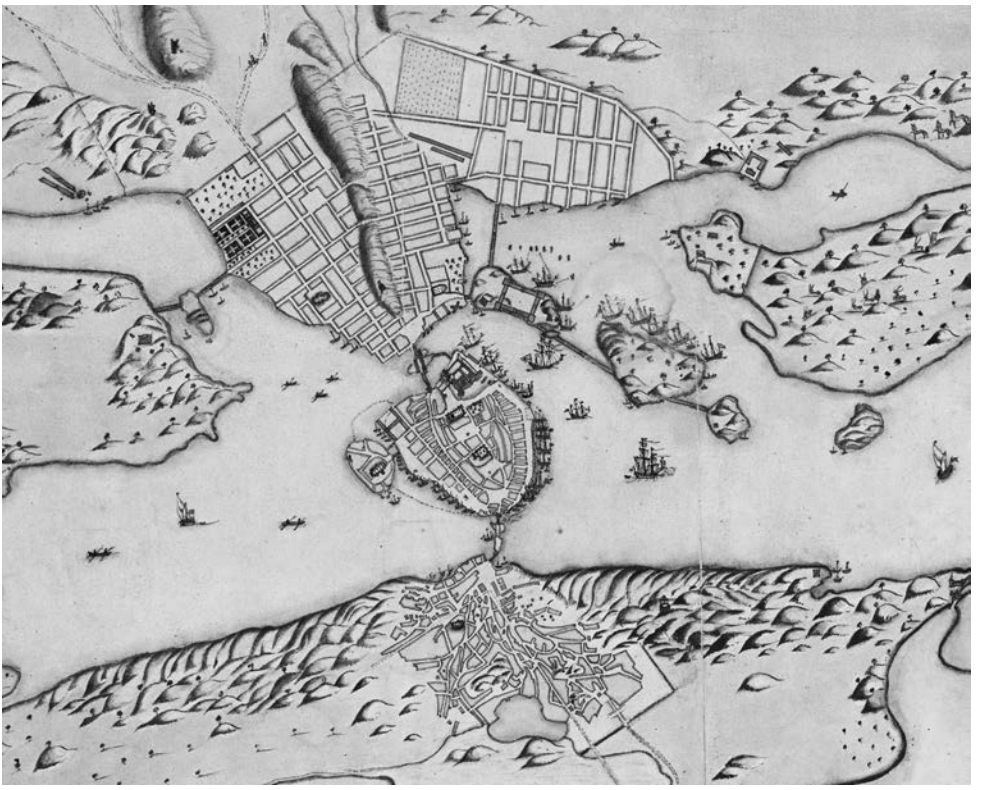
19 Janken Myrdal/Carl-Johan Gadd (eds.), Det svenska jordbrukets historia, vol. 3: Den agrara revolutionen: 1700–1870, Stockholm 2000, 186–187.

20 Ibid., 187.

21 Leif Wastenson et al. (eds.), Sveriges nationalatlas Befolkningen, Sveriges nationalatlas (SNA), 1st ed., Stockholm 1991, 59.

22 Göran Dahlbäck, Stockholm blir stad, in: Lars Nilsson (ed.), Staden på vattnet, part 1, 1252–1850, Stockholm 2002, 17–64, 17.

Figure 2: Stockholm in the early 1640s. While the north area called Norrmalm is characterised by a grid plan, the small island in the center, Stadsholmen (today the Old Town), and the rocky island in the south, Södermalm, retain a medieval organic town structure.



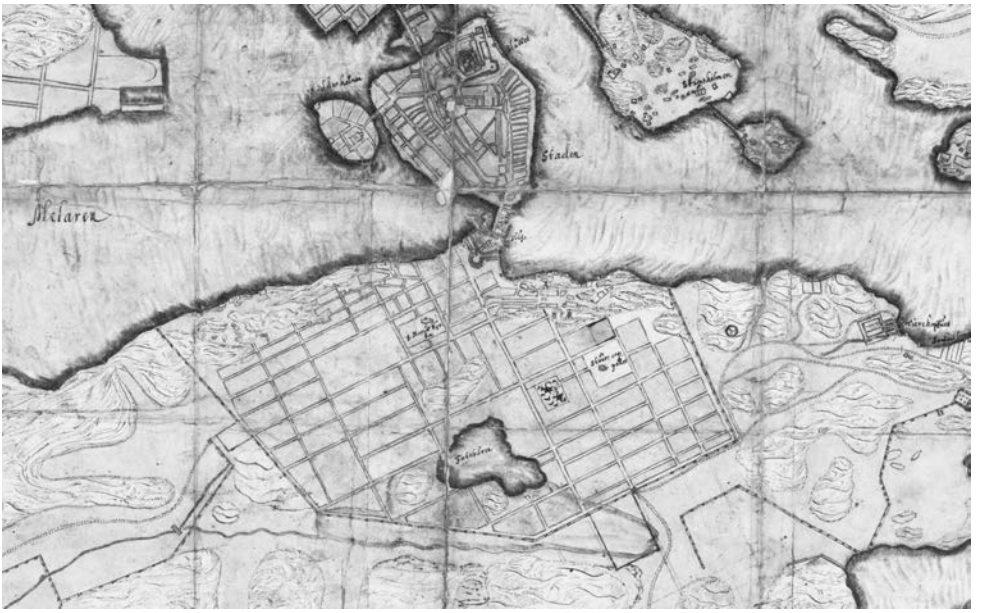
Source: Unknown author 1642, Kungliga biblioteket, Kart- och bildsektionen, Stockholm 51:30, https://stockholmskallan.stockholm.se/post/24365.

of great expansion. Sweden's new status as a great power meant that Stockholm now had to be turned into a European capital with a centralised administration, a new modern layout, and representational buildings. During the seventeenth century the population of Stockholm grew from an estimated 9,000 in the 1610s to 35,000 in the 1650s and 57,000 in the 1690s.[23] Extensive town planning transformed the city in the decades around 1650.[24] On Södermalm a gridiron plan was introduced, though it had to be adjusted to the difficult topography (see figure 3).[25] Another major change was the building of Queen Christina's Sluice between Stadsholmen and Södermalm in the 1640s. Opening up the passage between Lake Mälaren, the country's all-important inland waterway, and the Baltic Sea, the sluice was crucial to

23 Nils Ahlberg, Stadsgrundningar och planförändringar. Svensk stadsplanering 1521–1721, Uppsala 2005, 529.
24 Thomas Hall, Huvudstad i omvandling. Stockholms planering och utbyggnad under 700 år, Stockholm 1999, 53–54.
25 Ibid., 70–74.

Stockholm as a city in general, and to the development of Södermalm in particular (see figure 4). The town boundaries also became more distinct in the seventeenth century, when Stockholm, like all other towns in Sweden, was surrounded by a fence with tollgates, where toll (*tull*) was collected. The old names Hornstull and Skanstull in Södermalm signify that the whole island, including the arable land and unexploited rocky terrain, formed part of the city.

Figure 3: Detail of a map of Stockholm from 1656 showing the new rectilinear town plan in Södermalm.



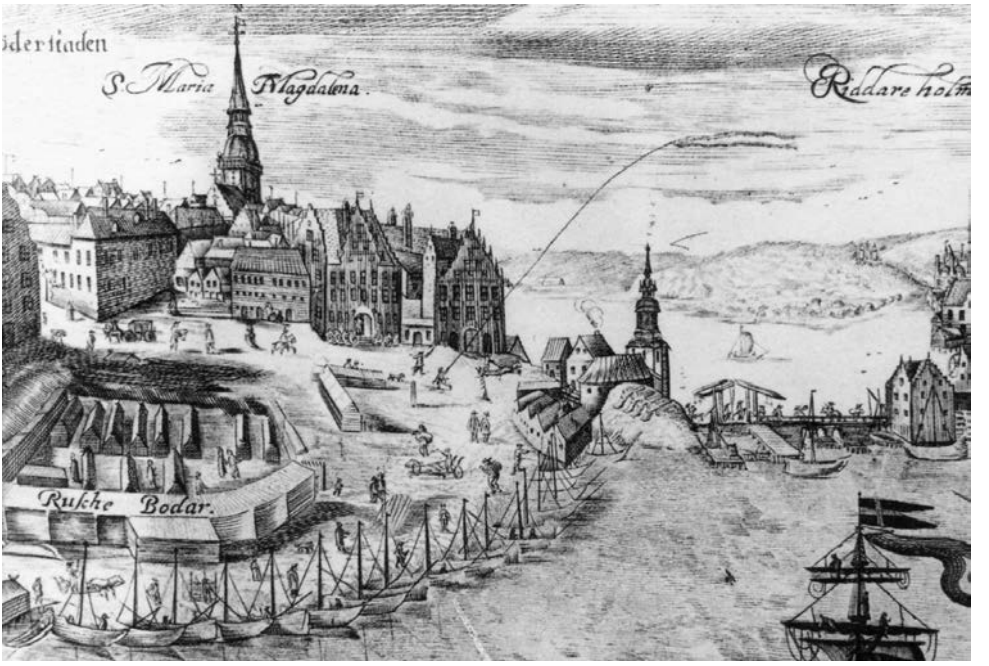
Source: Lantmäteriet, Historiska kartor, Lantmäteristyrelsens arkiv A99-1:11.

What characterised Södermalm in the seventeenth century, and who were its inhabitants? Interestingly, the economic activity of the island was already a mix of industrial production, trade, craft, and agricultural and horticultural cultivation. Its proximity to the harbours, the sluices, and the Iron Square in Stadsholmen, where all iron and copper – the backbone of the Swedish economy – had to be weighed before export, attracted entrepreneurs to set up business. Other inhabitants were active in shipping, toll collection, or weighing and transporting goods of various kinds.[26] Among the manufacturers, there were several textile industries, a tobacco spinnery, a tilery, several ropemakers, and tanneries.[27]

Horticultural production has also long been a characteristic of Södermalm. Fifteenth-century sources mention that the burghers in Stockholm had garden plots on the island.[28] Besides these, there seem to have been in excess of 50 gardeners in the 1670s, representing

26 Åke Meyerson, Befolkningen på Södermalm år 1676, in: Samfundet Sankt Eriks årsbok (1943), 73–106, 104.
27 Ibid., 99–102.
28 Ibid., 91.

Figure 4: Södermalmstorg, the square in Södermalm close to the sluice, 1650. We see some of the new stone houses, probably including Louis De Geer's palace in Götgatan and, in the foreground, the Russian market. Detail of a view of Stockholm made by Wolfgang Hartmann in connection with the coronation of Queen Christina in 1650.

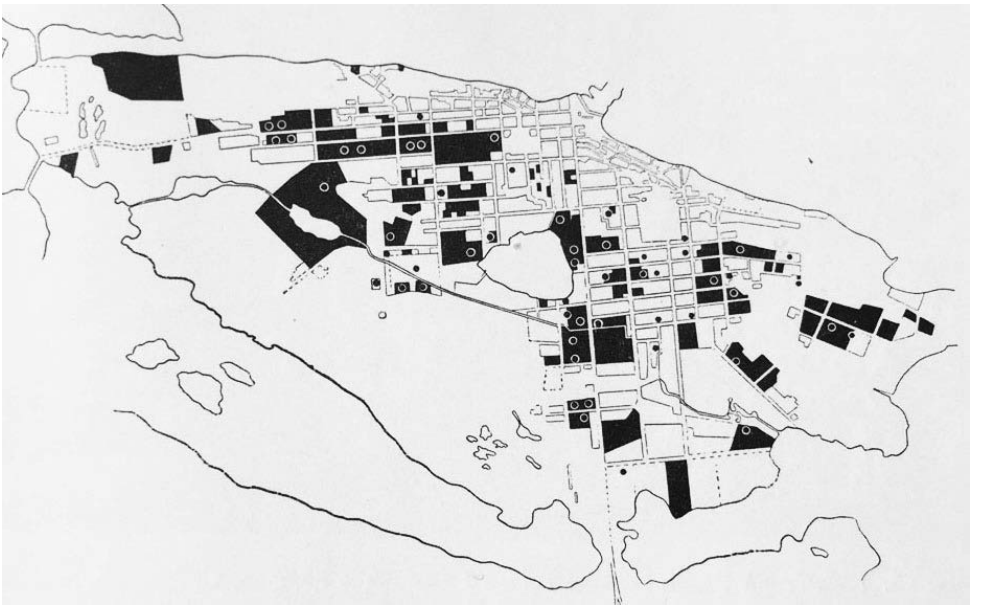


Source: Stockholms stadsmuseum, Inv. no SSM 503124, Public Domain, https://commons.wikimedia.org/wiki/File:S%C3%B6dermalmstorg_kopparstick_1650.jpg.

more than half of Stockholm's total number of gardeners (see figure 5). The majority owned their holdings, but as most of them did not report employing any garden labourers, the businesses seem to have been small and family-run. Many of them were selling produce to so-called *månglerskor,* women who, with no other way to support themselves, could obtain permits to manufacture and/or sell goods not included in the guild monopolies from stands in squares or streets. A large number of these women lived on Södermalm and sold their merchandise on the bridge to Stadsholmen.[29] In 1676 there were approximately 1,555 farms and houses, and some 12,700 inhabitants.[30] In addition to pastureland and fields for agricultural production, a typical feature of the island were the many mills, owned by the millers themselves or by wealthy tradesmen.[31]

29 Ibid., 97, 105.
30 Ibid., 81.
31 Ibid., 94.

Figure 5: Gardens in Södermalm in the 1670s (black), dots and rings indicate those belonging to gardeners, based on the population register of 1676 and the so-called *Holms Tomtböcker* (register of properties) of 1674/1679.



Source: Åke Meyerson, Befolkningen på Södermalm år 1676, in: Samfundet Sankt Eriks årsbok (1943), 73–106, 105.

The built environment was a mixture ranging from very simple traditional houses to grander dwellings built according to the latest fashion. While wooden houses of varying quality and size dominated the island, ostentatious stone buildings now appeared in the areas around the market square and the nearby Church of St. Mary Magdalene, built in the 1630s.[32] Some of them were palaces with large elaborate gardens. An early example is the palace of the wealthy Dutch entrepreneur and industrialist Louis De Geer. The location on Södermalm was, from a business point of view, ideal for someone like De Geer, who had established himself as a major owner of ironworks in Sweden. He took a keen interest in horticulture; there is a sketch by his own hand corresponding to the kitchen garden that was laid out at his Stockholm property. It indicates beds for a wide array of vegetables and herbs, such as artichoke, asparagus, Welsh onion, cress, sorrel, sugar beet, endive, Spanish cardoon, and sage, many of them specialties and rarities, which may have been imported from the Netherlands.[33] By this time, many wealthy burghers in Stockholm had begun to establish small or larger farms in the parts of the city surrounding the central island, particularly on Södermalm. These small holdings, or *malmgårdar* (*malm* farms; see figure 6), were used for farming and gardening to provide the owner family with provisions and perhaps some extra income. Equally important, however,

32 Ibid., 82.

33 Badeloch Noldus, A Dutchman with a Penchant for Parks, in: Lustgården (1998), 41–58, 50–52.

was their function as a place to relax and escape the hustle and bustle of the city, particularly during the summer months. The gardens were important for growing various plants and garden produce as well as from a social point of view.[34] Gardeners were often employed – for example, the majority of garden labourers on Södermalm in the 1670s were employed in *malmgårdar*.[35] Burghers continued to build new *malmgårdar* all through the eighteenth century. They remained rather heterogeneous in respect to size and purpose (see figure 7). Some provided the economic base for the families that owned them, while others represented mainly a pleasant place to spend time and a break from ordinary life.

Figure 6: Groen's *malmgård* in Södermalm, built in the seventeenth century, was formerly operated as a commercial garden.

Source: Photo by Holger Ellgård 2017, Creative Commons Attribution-Share Alike 4.0 International, https://commons.wikimedia.org/wiki/File:Groens_malmg%C3%A5rd,_jan_2017a.jpg.

Despite a clear commitment from the 1600s onwards to turning the spontaneously developed town of Stockholm into a well-planned capital based on continental ideals, large parts of Södermalm remained less regulated and devoted to urban agriculture well into the nineteenth century. Important factors in this, as we have seen, were the city's need for a degree of self-sufficiency and the desire to avoid the cost and difficulty of long-distance transport, a point especially pertinent when it came to fresh produce like vegetables and fruits. However, perceptions of the concept of urbanity itself were also of great relevance. The prestige of

34 Birgit Lindberg, Malmgårdarna i Stockholm, Stockholm 2002, 14–17.
35 Meyerson, Befolkningen på Södermalm, 97.

Figure 7: Plan of Zinkensdamm *malmgård* in Södermalm with its large gardens and fish pond, which in 1788 belonged to the tradesman Philip Jacob Marius. Explanation: a. Main house and outbuildings (at the top), b. Gardens, c. Outer garden with a newly established field, d. Enclosed area for tree cultivation, e. Field, f. Meadow, g. Meadow including rocky terrain and pond, h. Outland.

Source: Hieron. von der Burg 1788, Stockholms stadsarkiv, Församlingsritningar/MAR 94-95, https://sok.stadsarkivet.stockholm.se/bildarkiv/Egenproducerat/BN-ritningar/ForskartorPDF/SSAKR_009061_100dpi.pdf.

large houses and palaces with substantial gardens rich in fruit trees, vegetables, and flowers continued to be an important aspect of building a representational city, and as a bonus, many of these gardens also delivered garden produce to the citizens. In the eighteenth century the cultivation of tobacco, which could be called a "cross-over" between industry and urban agriculture, began to develop into an important enterprise on Södermalm. The majority of Stockholm's tobacco manufacturers were situated here, and the tobacco fields and adjoining tobacco barns would become something of a hallmark of the island.

The development in Södermalm from the nineteenth to the twenty-first century

In the nineteenth century, we see rapid urbanisation in Stockholm and intense development taking place in Södermalm. Around 1850 its population was roughly 27,000, by the turn of the century it had reached almost 70,000, and in the 1930s and 1940s it peaked at circa 145,000 inhabitants.[36] Several new industries were established in Södermalm, among them the Ludwigsberg foundry and mechanical workshops opened in the 1840s, which were to become an important industrial enterprise in nineteenth-century Sweden.[37] Another considerable line of business was brewing. One of the largest and best-known plants was the München brewery, founded in the 1850s. A decision with far-reaching significance in boosting the area's development was made when Stockholm's first railway station was placed in central Södermalm in the 1860s. This new and modern means of transportation facilitated the transfer of goods to and from the city, and soon new companies were established close to the railway station.

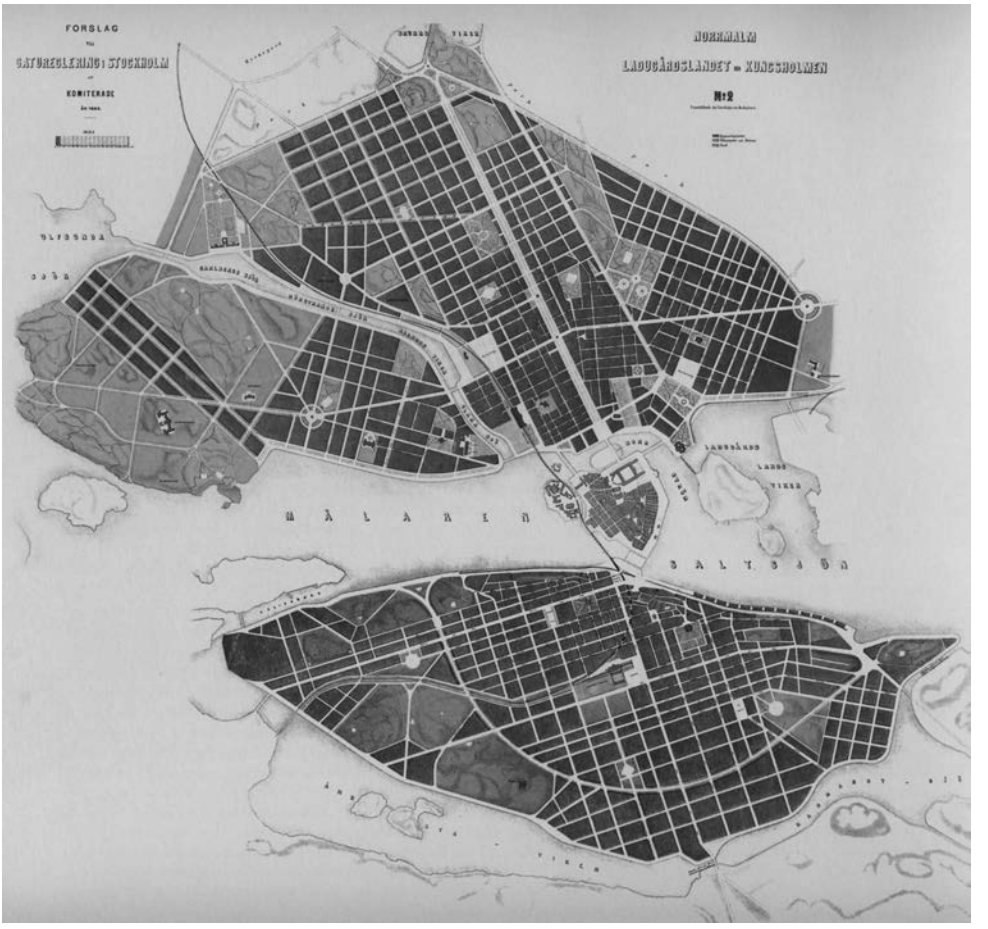
Around the same time, in 1866, a new city plan initiated by the politician Albert Lindhagen was produced in order to deal with the expansion (see figure 8). One of its principal aims was to introduce a new concept of urbanity, with a system of wide esplanades and boulevards, prominent buildings (often institutions), and public parks, and as we can see, all of Södermalm was now to be developed. Due to its radical approach, the great expense involved, and competing interests, the so-called Lindhagen plan met with opposition in the city council and was never implemented in its entirety. A revised version was finally passed a decade later for central Stockholm, and in the 1880s the public park of Tantolunden was laid out accordingly along the water in the western part of Södermalm.[38] In the Lindhagen plan, a wide main road, Ringvägen, was to have formed a semicircle around Södermalm, with the purpose of simplifying transportation between Lake Mälaren and the Baltic Sea. The topography, however, proved too difficult to master, and only one section of Ringvägen was finally built, running from north to south in the western part of Södermalm. As we see on the plan, the intention was to develop the whole island in a grid pattern, but very little had

36 Befolkningen i Stockholm 1252-2005 – från 1721 enligt stadens statistiska årsböcker, Utrednings- och statistikkontoret, Stockholms stad (2005), 30–33, https://stockholmskallan.stockholm.se/PostFiles/USK/historisk_befolkning_web.pdf (last visited 24 Oct. 2019).

37 Eva Dahlström Rittsél, Verkstadsmiljöer under 1800-talet. Mekaniska verkstäder mellan hantverk och industri, Stockholm 1999, 93–120.

38 Hall, Huvudstad i omvandling, 113–125.

Figure 8: The original version of the so-called Lindhagen plan from 1866, showing the proposed development of Stockholm, including Södermalm.



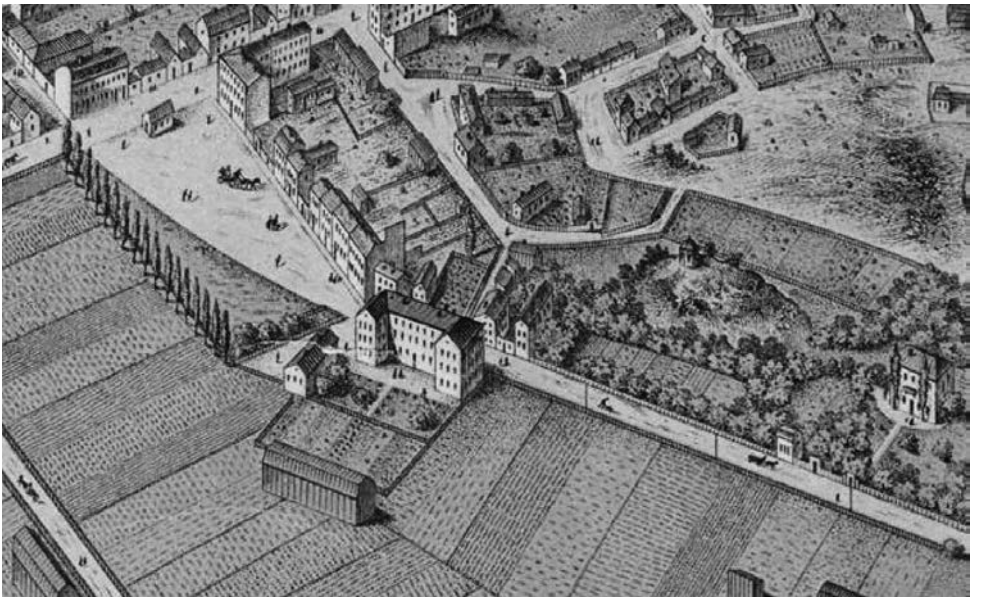
Source: Albert Lindhagen's general plan for Stockholm 1866, Stockholms stadsarkiv, Public Domain, https://commons.wikimedia.org/wiki/File:Lindhagenplanen_1866.jpg.

been realised by the turn of the century.[39] There was still a good deal of arable land, particularly tobacco plantations, much like what Heinrich Neuhaus's detailed map from the 1870s shows (see figure 9). Tobacco production was monopolised in the early twentieth century and significantly, the new state-owned Swedish Tobacco Company set up their first factory and offices in Södermalm in 1917, to be followed by several new buildings until the 1940s.

In 1906 the first allotment gardens on the island were established in the rocky terrain along the water south of the Tantolunden park. The area was called Eriksdalslunden after the former

39 Gatureglering Stockholm 1897. Map from 1897 showing the development of new houses, roads and parks in Stockholm until 1897, https://commons.wikimedia.org/wiki/File:Gatureglering_Stockholm_1897.jpg (last visited 20 Aug. 2019).

Figure 9: Detail from the panorama map by Heinrich Neuhaus from the 1870s, showing Malongen in the centre, one of Södermalm's oldest industries where textiles were produced from the 1660s, tobacco fields with a tobacco barn, and many gardens, among them the one by Groen's *malmgård* (to the right).



Source: Heinrich Neuhaus (1833–1887), Centraltryckeriet, 1875, Stockholms stadsmuseum Invent. no. 503158, Public Domain, https://commons.wikimedia.org/wiki/File:Neuhaus_panorama,_Nytorget,_Malongen,_Groens_malmg%C3%A5rd.JPG.

farm of Eriksdal, which had been sold to the city in the 1880s. The site was inspected and chosen by the allotment garden society in Stockholm (*Föreningen koloniträdgårdar i Stockholm*), which had been founded that same year with Anna Lindhagen as its first chairperson. On the visit to Eriksdalslunden she immediately saw the potential of the site. She wrote:

> "In the company of the former city gardener Medin, we directed our steps to Eriksdalslunden, the grove which by its beautiful location deserves the epithet 'the delightful'. There genuine Södermalm nature is preserved, with the rocks untouched, with the willows leaning out over the Årsta bay, with the sun in the right position all day and with sunset making Eriksdalslunden seem bright when the night has fallen over the rest of the city. In between all the wild nature we saw large stretches of open land – potato and tobacco land and an old venerable [tobacco] barn that was created as a tool for colonists."[40]

The word "colonist" is linked to the Swedish term for "allotment garden", which is *koloniträdgård* or "colony garden", and consequently the user is a *kolonist*. The quote conveys the

40 Anna Lindhagen, Koloniträdgårdar i Stockholm 10-årsskrift, Stockholm 1916, 5–6. Author's translation.

Figure 10: Map of east Södermalm (1938–40), showing the extension of the town planning at that time, including Ringvägen, the Eriksdalslunden allotment gardens, the new Erikslund modern housing area, and the railway station with the rail yard in the centre.

Source: Stockholms stadsingenjörskontor, 1940, Stockholms stadsarkiv SE/SSA/Tryckta kartor/Karta över de centrala delarna av Stockholm 1938-1940/Kartblad Staden:d, tryckår 1940, Creative commons CC-BY, https://stockholmskallan.stockholm.se/post/31639.

sense of untouched nature and rural feeling that Lindhagen experienced, despite the large rail yards around the station and all the industrial activities in Södermalm. Several other allotment areas would follow, among them one within the Tantolunden park.

Some parts of the island remained as they had been well into the 1930s, when the last areas were developed (see figure 10 and 11). One such area was between Eriksdalslunden and Ringvägen, where apartment buildings with small flats with modern commodities began to be built in the 1930s. They mirror the breakthrough of modernism in Sweden at the time.[41] In the early 1930s, the first underground line in Stockholm was built in a tunnel below Södermalm, as a first step toward replacing the trams and creating an efficient transportation system from the future suburbs in the south to the city centre. There were three stations, all still functioning: Slussen by the sluice, Södra Bantorget (now Medborgarplatsen) by the railway station, and Ringvägen (now Skanstull) by the former Skanstull tollgate. The last of these was situ-

41 Henrik O. Andersson/Fredric Bedoire, Stockholms byggnader. En bok om arkitektur och stadsbild i Stockholm, Stockholm 1988, 261–262.

Figure 11: View of the South Station and its vast rail yard, ca. 1940. New factory buildings and old fields existing side by side.

Source: Photo by unknown, Hans Björkman collections, Public Domain, https://commons.wikimedia.org/wiki/File:S%C3%B6dra_stationsomr%C3%A5det_1930-talet.jpg.

ated by the department store Åhlén & Holm on Ringvägen, which had originally opened in 1915, but been replaced by a new and much larger modern seven-storey building in 1929.[42]

Before relating the further development of Södermalm, some background must be provided on the evolution of the so-called Swedish model, which was implemented from the 1930s and onwards and would contribute to transforming Sweden from one of the poorest countries in Europe around the turn of the century to the richest in the 1970s. In a famous speech in 1928, the Social Democratic leader Per Albin Hansson introduced *folkhemmet*, the concept of society and state as the "people's home", as a metaphor of the society that he wanted to create. The foundation was, as in any good home, a sense of togetherness and common feeling, where equality, consideration, cooperation, and helpfulness would prevail. When applied to society, this would mean the breaking down of all social and economic barriers which still separated privileged and deprived citizens. The major task for politicians in a democracy, according to Hansson, was to create a society where all citizens could be assured

42 Ibid, 121.

of economic and social security and everybody would cooperate for the common good.[43] The association between home, nationalism, and socialism was effective in bridging class identity and thereby attracting a wider base of voters.[44] Around the same time, in 1930 the Stockholm Exhibition introduced modernism, or functionalism as it was known and applied in Sweden, in architecture and urban planning to a wider audience.[45] The exhibition would be of great importance to the Social Democratic ideology and the development of Swedish society over a long period of time. The Social Democrats won the general elections in 1932 and would stay in power until 1976. The implementation of *folkhemmet* was carried out in cooperation with industry and was accentuated after World War II when the economy grew strong.[46] The concept of the Swedish welfare state was developed, with a large public sector providing services in housing, health, and education, as well as a universal social insurance system in order to guarantee decent living conditions for all. Urban planning and housing policy were a central part of the political agenda. Everyone, including the working class, was to be offered affordable, practical, and comfortable modern homes; however, the various construction projects also provided work during recession periods. Physical planning was now established as an academic subject and urban planning had become an expert field, strictly controlled by scientifically developed guidelines and economic regulations.[47] The building process in new housing areas was further rationalised in the 1960s, speeded up and on a new scale, as construction methods had been developed with modular units and prefabricated elements.

The quest to create a modern society also included the central parts of Swedish towns and cities, where existing buildings and blocks were demolished to give way to modern shopping centres and facilitate car traffic.[48] Stockholm was subject to one of the largest urban renewal projects in Europe during the 1950s and 1960s. In a period when other countries were rebuilding cities that had been destroyed during World War II, politicians in the Swedish capital were demolishing the old quarters in the city centre in lower Norrmalm and replacing them with modern commercial and business buildings (see figure 12). The local politician Joakim Garpe commented on the transformation during a debate in the City Council in 1963, explaining that the intention was to adjust Norrmalm according to "the capital's special leadership role". It was to "become the display window of Sweden" and "the representative city district of the modern Swedish welfare society".[49] Overall, urban development reflected the confidence in rationality, function, large-scale solutions, and science that characterised the Swedish welfare state until the 1980s. It relied on a powerful government, a large public sector, and an independent municipal structure responsible for interpreting and implement-

43 Per Albin Hansson, Från Fram till folkhemmet. Per Albin Hansson som tidningsman och talare, Solna 1982, 227–230; Timothy Alan Tilton, The Political Theory of Swedish Social Democracy, Oxford 1990, 126–127.

44 Anders Isaksson, Per Albin 3. Partiledaren, Stockholm 2000, 189–191.

45 Andersson/Bedoire, Stockholms byggnader, 261–262.

46 Christer Lundh, Spelets regler. Institutioner och lönebildning på den svenska arbetsmarknaden 1850–2000, Stockholm 2002, 139.

47 Johan Edman, New Directions in Theorizing the Professions; the Case of Urban Planning in Sweden, in: Acta Sociologica 44/4 (2001), 301–311.

48 Bengt O. H. Johansson, Den stora stadsomvandlingen. Erfarenheter från ett kulturmord, Stockholm 1997, 46–48, 56–58.

49 Hall, Huvudstad i omvandling, 127. Author's translation.

ing national policies locally.[50] The ethnologist Åke Daun points out that no other Western society has given so much power to government and public planners, and in light of this he emphasises rationality as a key factor in the Swedish mentality. Daun concludes: "The 'philosophy of planning' entails that one believe in the possibilities of arranging social conditions for the best of all citizens by means of rational thinking."[51]

Figure 12: The city centre of Stockholm was transformed in the 1960s to become a "display window" of the modern Swedish welfare state. The photo shows the five high-rise office buildings under construction, the main feature of the transformation, amongst the existing older buildings in their quarters. The area in front of the five "trumpet-blasts" would later be developed into Sergel square, where the House of Culture, with a theatre, reading rooms, exhibition areas, a restaurant and café, was built in the early 1970s.

Source: Photo by Oscar Bladh, Stockholms stadsmuseum, Photo no. Fa 50936, Creative commons CC-BY, https://stockholmskallan.stockholm.se/post/5340.

Södermalm was a working-class area in the twentieth century (see figure 13). The many industries made it less attractive as a residential zone. In addition, the island was overcrowded, with many families living in one-room apartments. This led to large numbers of inhabitants choosing to leave when given the opportunity with the expansion of suburban areas sprawl-

50 Sylvain Ducas, Case Study of the City of Stockholm and the Greater Stockholm Area. Summary, October 2000, 15, http://www.habitation.gouv.qc.ca/fileadmin/internet/centredoc/pubSHQ/M06301.pdf (last visited 10 July 2019).

51 Åke Daun, Swedish Mentality, University Park, PA 1999, 137.

Figure 13: Workers' cottages with gardens in Södermalm, 1946, with the large new hospital Södersjukhuset in the background.

Source: Photo by Lennart af Petersens (1913–2004), 1946, Stockholms stadsmuseum, Photo no. F 36653, Creative commons CC-BY, https://stockholmskallan.stockholm.se/post/9574.

ing out of the city. The population more than halved from the 1940s to the 1980s, when there were only about 70,000 inhabitants remaining in Södermalm.[52] During the 1970s and 1980s many industries were relocated and their buildings either demolished or turned into housing or offices. The railway station with its expansive rail yard was removed from Södermalm and replaced by a lesser station for commuter trains. The former transportation hub in the middle of the island was thus, in the late 1980s, turned into a housing area for some 30,000 inhabitants, equivalent to a fairly large Swedish city. During this period of deindustrialisation,

52 Befolkningen i Stockholm, 30–33.

Figure 14: Urban agriculture in Södermalm. The members of the non-profit association *Trädgård på spåret* started a garden project to spread knowledge about cultivation and food and develop a green vision for the area.

Photo by Helena Lyth 2015.

artists, musicians, writers, and other young people started to move to Södermalm, seeking something different, perhaps some sort of authenticity, and a less bourgeois lifestyle.

During the 1990s and the twenty-first century the island has undergone gentrification and been transformed from a somewhat neglected and run-down former working-class area into one of the most attractive and sought-after parts of the city with an array of restaurants, bookshops, designer shops, vintage shops, and flea markets. In 2014 Södermalm was designated the third "coolest neighbourhood" in the world by *Vogue* magazine, echoing its transformation into an area of the upper middle class and hipsters, with numerous residents working in media, the arts, and other creative professions.[53] The population has risen to

53 Global Street Style Report: Mapping Out the 15 Coolest Neighborhoods in the World, The Vogue (September 2014), https://www.vogue.com/slideshow/fifteen-coolest-street-style-neighborhoods#3. (last visited 16 Aug. 2018).

nearly 130,000 (2017),[54] with densification and escalating housing prices as a result. During the last decade, small-scale urban agriculture, particularly gardening, has been encouraged by the local authorities as part of a new lifestyle in the city.[55] Several such projects are found in different places in Södermalm. "Garden on Track" (*Trädgård på spåret)* is one such initiative that started in 2012, in which cultivation takes place along an abandoned railway track (see figure 14).[56] Equally, organic and/or locally grown food products are regularly sold at a farmer's market.

Conclusion

It has often been assumed that it was primarily nineteenth-century rectilinear town planning that made urban gardening and urban agriculture disappear in Sweden. This may have been the case in major European cities where the process of urbanisation and industrialisation was on a larger scale, but in the case of Stockholm and Södermalm, traditional agriculture and horticulture prevailed well into the 1930s and was finally swept away during the post-war era. Often referred to as the record years, this was the period when the modern Swedish welfare state was formed, based on a Social Democratic political agenda and a strong economy, introducing social and economic reforms including housing, pensions, vacation time, education, and women's liberation. Modernity was a fundamental concept in building the welfare state.[57] The process of developing a modern society had of course started much earlier, yet this interpretation of modernity was new, and it is the key to understanding why urban agriculture disappeared in Södermalm. The emphasis on rationality and efficiency in the welfare state, characterised by a division between producer and consumer and between working time and leisure, and by striving for large production volumes and effective transportation, also lead to a new kind of division between urbanity and rurality. Agriculture was no longer considered compatible with modern life in the city, and the concept of the "green city" was invested with a new meaning, designating parks and other green recreational areas as a part of urban planning. The allotment gardens in Södermalm, however, did not have to make way for housing or other expansions, probably because development for a long time was mainly taking place in the suburbs. Once the area regained its attractiveness and new building projects were planned, the allotment gardens were too established to be threatened; today they are protected and cherished as cultural heritage (see figure 15). Some of the old Södermalm gardens have also been protected in the last years, some as museums, others in

54 Befolkningen i Stockholm, 30–33.

55 Cf. Stadsodla på Södermalm, http://www.stockholm.se/-/Nyheter/Park-natur-och-friluftsliv/Stadsodla-pa-Sodermalm/ (last visited 16 Aug. 2018); Södermalm har fått en ny park med stor stadsodling, in: Södermalm Direkt, 25 May 2016, https://www.stockholmdirekt.se/nyheter/sodermalm-har-fatt-en-ny-park-med-stor-stadsodling/aRKpew!EhJVzYIuxWkTIWEg4DnRg/ (last visited 16 Aug. 2018); Allt fler Södermalmsbor vill bli stadsodlare, in: Mitti Stockholm, 22 March 2016, https://mitti.se/nyheter/allt-fler-sodermalmsbor-vill-bli-stadsodlare/ (last visited 16 Aug. 2018).

56 Trädgård på spåret on Facebook, https://www.facebook.com/TRADGARDPASPARET/ (last visited 16 Aug. 2018).

57 Urban Lundberg/Klas Åmark, Social Rights and Social Security. The Swedish Welfare State, 1900–2000, in: Scandinavian Journal of History 26/3 (2001), 157–176.

people's day-to-day environment. However, as they are only rarely used for producing food, but rather as green recreation and leisure areas, they have in a sense been incorporated into modern thinking.

Figure 15: Eriksdalslund is one of the oldest allotment garden areas in Stockholm. Today Eriksdal is a cherished recreational area and a part of the cultural heritage of Södermalm.

Photo by Åsa Ahrland 2019.

Erich Landsteiner

Urban Viticulture in Late Medieval and Early Modern Central Europe

Abstract: Vine-growing and wine production were to a large extent part of urban economy in late medieval and early modern Europe. This paper takes issue with the concept of *Ackerbürgerstadt* discussed in German urban history since the beginning of the twentieth century, to come to terms with the intense involvement of towns in agrarian production. By drawing on examples from the city of Vienna and the town of Retz in Lower Austria, it is argued that towns specialized in vine-growing, produced a cash-crop for regional and supra-regional markets, were troubled by class conflicts between vineyard owners and wage labourers, regulated labour relations extensively, and strove to dominate the local wine trade. This does not conform to the concept of *Ackerbürgerstadt*, implying food-crop production for subsistence and a low level of social stratification.

Key Words: urban viticulture, *Ackerbürgerstadt*, vine-growing towns, labour relations, market regulation

At the turn to the twentieth century, German economic history, together with the school of historical economics, excelled in the construction of typologies. In regard to the history of towns and urbanisation, Karl Bücher, Werner Sombart and Max Weber devised classifications by stressing the economic basis of towns and their relationship with the surrounding countryside.[1] In this way, Sombart and Weber distinguished "consumer towns", "producer towns", "merchant towns", and a kind of "agrarian town" which they labelled as *Ackerbürgerstadt*. Weber defined this strange creature in his treatise on cities in the following way:

> "Historically, the relation of the city to agriculture has in no way been unambiguous and simple. There were and are agrarian cities (*Ackerbürgerstädte*), which as market centres and seats of typically urban traders are sharply differentiated from the average village, but in which a broad stratum of the burghers produces food for their own consumption and even for the market. Normally, to be sure, it is true that the larger a city, the less likely it is that its inhabitants would dispose of farmland sufficient for their food needs."[2]

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1 See, for a concise discussion, Friedrich Lenger, Der Begriff der Stadt und das Wesen der Städtebildung: Werner Sombart, Karl Bücher and Max Weber im Vergleich, in: Stephan Selzer (ed.), Die Konsumentenstadt, Köln/Weimar/Wien 2018 (Städteforschung A 98), 25–38.

2 Max Weber, Economy and society, Berkeley et al. 1978, 1217. The treatise on cities was first published – posthumously – in: Archiv für Sozialwissenschaft und Socialpolitik 47 (1921), 621pp., and only later integrated into *Wirtschaft und Gesellschaft*.

Sombart, who defined towns economically as "larger settlements depending for their provision on the products of foreign agrarian labour", went so far as to question the urban character of this kind of town and surmised that the larger part of medieval European towns were in fact villages, in respect to their economic constitution.[3] Following Sombart and Weber, Horst Jecht, in a still much cited essay from 1926, on the social structure of medieval towns, supplemented this typology by stressing the low degree of social differentiation and static character of the *Ackerbürgerstadt*, to which he also denied any urban economic functions. According to him, only large producer- and merchant-towns catering for supra-regional markets had the disposition to develop features of class societies.[4]

Ever since, German urban (economic) history has been haunted by the ghost of the *Ackerbürgerstadt*. Given the fact that in late medieval and early modern times the vast majority of settlements with town charters in Central and East-Central Europe had population figures well below the usually applied thresholds of 5,000 or 10,000 inhabitants and contained considerable elements of agrarian production, historians still discuss whether these places should be considered as towns.[5] The further east we look, the more pronounced these features become. Around 1500 only six towns (all capitals) in East-Central Europe (the Austrian, Bohemian, Hungarian lands and Poland) had more than 10,000 inhabitants, containing a mere 2 per cent of the overall population in these territories. However, if one includes all towns the share of urban populations amounts to 20–25 per cent, and if we include the large number of market places (*Markt* in German, *mestečko* in Czech, *oppidum* in Hungarian), often much bigger than the towns in demographic terms, the share would be substantially higher.[6]

The most common solution to this dilemma – to stress that in the medieval and early modern period nearly all towns, large or small, contained elements of agrarian production and people working the land,[7] but that in the end real towns were essentially based on industry and trade – begs the question. That pre-industrial towns strove for autonomy in respect to food provision as far as they could, that the members of the upper strata of urban societies had land holdings and received rent in money and in kind, and that in an organic economy the processing of raw materials grown on land constituted a major sector of the urban economy, is quite evident. In discussing urban agriculture of the past, it is therefore important to stress that there were towns, large and small, in the European past which relied

3 Werner Sombart, Der moderne Kapitalismus, vol. 1, 2nd ed., München/Leipzig 1921, 128, 135.

4 Horst Jecht, Studien zur gesellschaftlichen Struktur mittelalterlicher Städte, in: Vierteljahrsschrift für Sozial- und Wirtschaftsgeschichte 19 (1926), 48–85; Eberhard Isenmann, Die deutsche Stadt im Spätmittelalter 1250–1500, Stuttgart 1988, 268–269, still refers extensively to Jecht.

5 For recent debates see Kurt-Ulrich Jäschke/Christian Schrenk (eds.), Ackerbürgertum und Stadtwirtschaft (Quellen und Forschungen zur Geschichte der Stadt Heilbronn 13), Heilbronn 2002; Herbert Knittler (ed.), Minderstädte, Kümmerformen, gefreite Dörfer (Beiträge zur Geschichte der Städte Mitteleuropas 20), Linz 2006; see also Katrin Keller, Ackerbürgerstadt, in: Encyclopedia of Early Modern History Online, executive editor of the English edition: Graeme Dunphy, http://dx.doi.org/10.1163/2352-0272_emho_SIM_016561 (last visited 2 Feb. 2020).

6 See the synthesis by Herbert Knittler, Die europäische Stadt in der frühen Neuzeit, Wien/München 2000, 267–280; and Markus Cerman/Herbert Knittler, Town and country in the Austrian and Czech lands, 1450–1800, in: Stephen. R. Epstein (ed.), Town and country in Europe, 1300–1800, Cambridge 2001, 176–201.

7 Klaus Fink, Feld- und Waldwirtschaft im spätmittelalterlichen Alltag rheinischer Städte, in: Jäschke/Schrenk (eds.), Ackerbürgertum, 157–184, describes the concept of *Ackerbürgerstadt* as a misnomer concealing the agrarian foundations of medieval towns.

to a large extent on agrarian production and whose inhabitants lived primarily from the proceeds of their agrarian activities. It is equally important to define clearly what kind of agrarian production, according to the particular circumstances, we are dealing with. The German terms *Ackerbürgerstadt* and *Ackerbürger* have a strong connotation of subsistence production of basic food-crops, with eventual marketing of surpluses (see the quote from Max Weber above). But what about cash-crops such as wine?

According to Roger Dion, a French geographer and author of a still widely cited history of French viticulture, vineyards in pre-industrial times were urban creations, just like suburbs and vegetable gardens.[8] I am not convinced that this is correct for the gardens, but with respect to the historical geography of vine-growing there is ample evidence that Dion got it right – with some qualifications. What Dion had in mind was extra-Mediterranean vine-growing, which was and is confined to climatically suitable regions (admittedly, the limits have shifted over time due to climate change), tends therefore to monoculture and regional agglomeration, and produces a commodity for regional and supra-regional markets. In contrast, and due to the firm integration of vines into the Mediterranean agrosystem – often based on the combination of cereals, tree crops and vines – vine-growing in this part of Europe was nearly ubiquitous, wine was part of the daily popular diet, and the wine trade together with other produce, often took place mainly at the local level. This general contrast in the degree of specialisation and market integration between Mediterranean and extra-Mediterranean viticulture is mirrored by significant contrasts in the techniques of vine cultivation. It seems appropriate to speak of extensive and intensive ways of vine-growing, the latter being marked by monocultural vineyards, with high plant densities and much higher manual labour requirements than the intercropping systems (*coltura promiscua*) of the Mediterranean zone.[9]

Due to these structural features, vine-growing regions in the extra-Mediterranean zone were largely urbanized landscapes.[10] The river valleys of the Upper and Lower Rhine, the Moselle, the Neckar, the Main and the Saale (Thuringia), the Danube in Austria and Western Hungary, and many of their tributaries as well as the foothills of many mountain regions, where wine was grown in the past to a far larger extent than today, were all densely filled with towns and market places based on vine-growing.[11] The same holds true for the Garonne and

8 Roger Dion, Histoire de la vigne et du vin en France des origines au XIXe siècle, Paris 1977 [1st ed. 1959], 41: "Le vignoble, dans les temps antérieurs au machinisme, naît de la ville, quelle que soit la nature du terrain qui le port, comme naissent les faubourgs ou les jardins maraîchers."

9 Cf. Erich Landsteiner, Wine-growing and agricultural specialisation in late medieval and early modern Europe, in: Annie Antoine (ed.), Agricultural specialization and rural patterns of development (Rural History in Europe 12), Turnhout 2016, 249–272, 251–255.

10 Karl-Heinz Schröder, Weinbau und Siedlung in Württemberg (Forschungen zur deutschen Landeskunde 73), Remagen 1953, 93: "Weinland ist Städteland"; Tom Scott, Medium-sized and small towns on the Upper Rhine in the fifteenth and sixteenth centuries between domination and competition, in: idem, Town, country and regions in Reformation Germany, Leiden/Boston 2005, 283–306, 286, following Franz Irsigler, defines, "urbanized landscapes" (*Stadtlandschaften*) as regions "characterized by an above-average provision of urban centres – more than 25 per cent of the population – and very intensive relations with their hinterlands, which cause the autonomy of the rural area tangibly to recede".

11 Cf., in general, Tom Scott, Medieval viticulture in the German-speaking lands, in: German History 20 (2002), 95–115; and more specifically, Otto Volk, Wirtschaft und Gesellschaft am Mittelrhein vom 12. bis zum 16. Jahrhundert, Wiesbaden 1998, 660–668; Franz Irsigler, Weinstädte an der Mosel im Mittelalter, in: Ferdinand Opll (ed.), Stadt und Wein, Linz 1996, 165–179; Erich Landsteiner, Weinbau und bürgerliche Hantierung.

Dordogne, and vast stretches the Loire, Marne, Rhône, Seine and Yonne in France.[12] These often very small towns were so close together that they hardly had a hinterland of their own. Sebastian Münster in his *Cosmographei* (1550) quipped about the Alsatian vine-growing towns in the foothills of the Vosges, that they "lie so close together that one may fire a rifle from one to the other".[13] The frequent location along rivers is of course related to transport facilities provided by the waterways, since all these regions produced wine for export. The intimate relationship between wine production and urbanisation was from very early on clearly linked to the high level of commercialisation of this sector of the agrarian economy, but it is less clear what was cause and what was effect in this relationship. On the one hand, the high land-use and labour intensity of specialized vine-growing led to high population densities; on the other hand, the demand by urban consumers (in the case of larger agglomerates) propelled wine production and the penetration of the surrounding countryside by urban investors.[14] This seems to be a hen and egg problem, but it is evident that these vine-growing towns, especially the smaller ones with their rural appearances, were not *Ackerbürgerstädte* in the sense that they catered essentially to their own needs. They produced a cash-crop for export and depended on supplies from adjacent regions for food-crops.

Drawing on the example of Trier, the main vine-growing town in the Moselle valley, Lucas Clemens has made an attempt to define a "wine town" by five criteria:

- the location in a vine-growing region;
- the participation of a large segment of the population in wine production;
- organized craft groups (guilds) related to the commodity chain of wine production;
- the concentration of capital-intensive wine-processing equipment (presses and cellars);
- the existence of a wine market and suitable transport facilities for wine export.[15]

Clemens rightly stresses the difference between wine-producing towns and wine-trading towns. Although the producing towns depended on trade for the commercialisation of their main product, the trading towns such as Strasbourg, Cologne, Frankfurt, Ulm or Nuremberg were eager to attract as much wine as possible to their wine markets for consumption and wider distribution, whereas the producing towns strove to exclude foreign wine from their markets out of a fear of over-supply, competition, and loss of reputation for their own brand.

The emblematic model of a European "wine town" is Bordeaux, whose present-day status as a world heritage site (since 2007) is based on three criteria: its port, its architecture, and its *vignoble*.[16] The capital of the Gironde had an extensive viticultural hinterland owned by

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Weinproduktion und Weinhandel in den landesfürstlichen Städten und Märkten Niederösterreichs in der frühen Neuzeit, in: Opll (ed.), Stadt und Wein, 17–50.

12 Thomas E. Brennan, Burgundy to Champagne. The wine trade in early modern France, Baltimore/London 1997, 94–100; see also Dion, Histoire, for the historical geography of French vine-growing regions.

13 Cited in Scott, Medium-sized and small towns, 290.

14 Scott, Medieval viticulture, 104; Dion, Histoire, 205–206, for south-western France.

15 Lucas Clemens, Trier – Eine Weinstadt im Mittelalter (Trierer Historische Forschungen 22), Trier 1993, 413–414.

16 Sandrine Lavaud, Le vignoble de Bordeaux au mirroir de l'Imago Urbis: la lente reconnaissance d'un paysage identitaire (Moyen Âge–XVIIIe siècle), in: Marie-Claude Marandet (ed.), La ville et le plat pays (XIIIe–XVIIIe siècles), Perpignan 2016, 233–261, 233.

its citizens, which was transformed through the creation of large wine-producing estates by the *notables*, cultivated by a salaried labour-force, from the sixteenth century until today. "In 1744 the Subdelegate of Bordeaux asserted that over half of his jurisdiction was devoted to grapevines and that nine-tenths of this vast vineyard was owned by the nobility and wealthy 'Bourgeois de Bordeaux'".[17] By the beginning of the fourteenth century, Bordeaux exported huge quantities of wine and dominated the wine trade of the whole region through its extensive trading privileges acquired during the fourteenth and fifteenth century from the English and French kings. By blocking the introduction and sale of wine from other vine-growing centres upstream of the Garonne until Christmas, it secured in this way the privileged sale of the wine produced by its citizens.[18]

Considering the example of Bordeaux, we can add two further criteria to the list proposed by Clemens. In contrast to what has been claimed to be typical for the social structure of *Ackerbürgerstädte*, I will stress the development of a labour market in these towns, its regulation, and the frequent struggles between vineyard owners and their labour force over wages and working hours (in case of wage labour), the partition of the product (in case of share-cropping), and employment conditions in general. Furthermore, not merely the existence of a wine market, but its regulation and domination by privileged towns, is of interest.

To corroborate these general propositions, the rest of this paper is dedicated to two examples of vine-growing towns in Lower Austria, one large and one small.[19]

Vienna

Vienna was by far the largest, and up to the middle of the eighteenth century the only town in the territory of present-day Austria with constantly more than 10,000 inhabitants during the late medieval and early modern periods. Its population rose from 20,000 in about 1500 to 25,000–30,000 in 1600, and 175,000 in 1750. Even in the town charter of 1296 it is stated that the honour and well-being of the town was mostly based on vine-growing. A vivid description of the town by Enea Silvio Piccolomini (the later pope Pius II) from the middle of the fifteenth century reveals that the subterranean wine cellars in the town were as spacious as the buildings on the surface. According to Piccolomini, the vintage lasted up to 40 days; every day during this period 300 wagons drawn by 1,200 horses brought grapes into the city.

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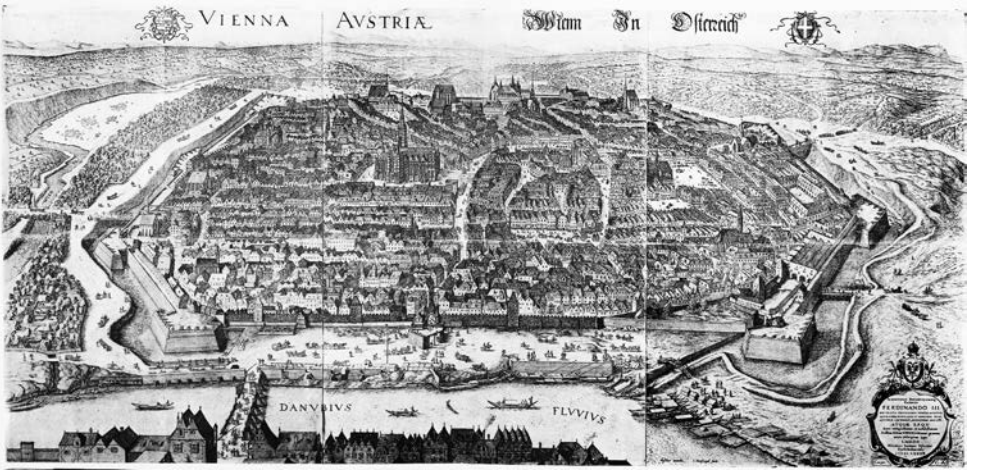
17 Robert Forster, The noble wine producers of the Bordelais in the eighteenth century, in: The Economic History Review, New Series 14 (1961), 18–33, 22; see also Sandrine Lavaud, D'un vignoble populaire à un vignoble de notables: les transformations du vignoble suburbain de Bordeaux du XVe au XVIIIe siècle, in: Annales du Midi 107 (1995), 195–217.

18 Sandrine Lavaud, Vignobles et vins d'Aquitaine au Moyen Âge, in: Territoires du vin 5 (2013), http://preo.u-bourgogne.fr/territoiresduvin/index.php?id=782 (last visited 2 Feb. 2020), provides a concise overview. The *locus classicus* is Roger Dion, L'ancien privilege de Bordeaux, in: Revue géographique des Pyrénées et du Sud-Ouest 26 (1955), 223–236. For export figures see Mary K. James, The fluctuations of the Anglo-Gascon wine trade during the fourteenth century, in: The Economic History Review, New Series 4 (1951), 170–196.

19 In what follows I will draw heavily on my own research, where the manuscript sources are referenced: Erich Landsteiner, Weinbau und Gesellschaft in Ostmitteleuropa, unprinted doctoral thesis, University of Vienna 1992; idem, Weinbau und bürgerliche Hantierung; idem, Wien – eine Weinbaustadt?, in: Peter Cendes/Ferdinand Opll (eds.), Wien. Geschichte einer Stadt, vol. 2: Die frühneuzeitliche Residenz (16. bis. 18. Jahrhundert), Wien/Köln/Weimar 2003, 141–146.

Nearly every citizen sold wine in his house and huge quantities were exported. *Incredibile dictum est, quanta vis inducator vini, quod vel Vienne bibitur, vel ad extraneos per Danubiam contra cursum aque magno labore mittitur*.[20] A favourable constellation of sources from the middle of the fifteenth century allows us to offer a more detailed account of the extent of the Viennese wine economy and its institutional ramifications during this period. It suggests that the picture drawn by Piccolomini is quite realistic.

Figure 1: Bird's-eye view of Vienna in 1609. Engraving by Jacob Hoefnagel, re-edited by Claes Jansz Visscher 1640



Source: Historisches Museum der Stadt Wien, Inv. Nr. 31043. Public domain, https://commons.wikimedia.org/w/index.php?curid=1176920 (last visited 2 Feb. 2020).

Up to 1705, one of the pillars of the fiscal system of the city of Vienna was the levy of taxes on the wine harvests of all those under the fiscal authority of the city. The harvest was registered at the city gates during the vintage, and once more on Saint Martin's Day, in the cellars and dwellings of the taxpayers. The assessment of 11 November 1461 amounted to 140,245 hectolitres (hl).[21] Part of this wine stock was consumed by the locals, but a much larger share went into export. In the 1580s, 45,000 hl (on average per year) were sold by the pot, according to the proceeds of the excise tax. In 1445, 140,600 hl of wine were exported out of the city, mainly on the Danube westwards to Upper Austria, Salzburg, and Bavaria as well as over land to Bohemia and Moravia; in 1446, exports amounted to 71,600 hl.[22]

When the grapes in the vineyards surrounding Vienna were ready, the city authorities used the edict rules and regulations for proceeding with the vintage. The oldest of the preserved vintage ordinances, dated 28 September 1461, provides valuable insights into the busiest

20 Rudolf Wolkan (ed.), Der Briefwechsel des Eneas Silvius Piccolomini, Wien 1909 (Fontes Rerum Austricarum II/61), 80–84, the quotation 82–83. Wolkan dated this description to 1438. Today it is considered to be part of Piccolomini's Historia Australis (ca. 1450/51).

21 Hartmann J. Zeibig (ed.), Copey-Buch der Gemainen Stat Wien 1454–1464 (Fontes Rerum Austriacarum II/7), Wien 1853, 284–285.

22 Landsteiner, Weinbau und bürgerliche Hantierung, 40.

period of the economic life of the city. Only grape-must grown in a district limited by the rivers Danube to the north, Leitha to the east (the borderline with the Hungarian kingdom), Fischa to the south, and Piesting to the west was allowed to be brought into town. Nearly every vine-growing settlement in Lower Austria knew such limitations concerning the introduction and storage of wine to avoid oversupply, and in many cases, storage and sales rights were limited to wine produced by the inhabitants within the territory of the settlement.

In the case of Vienna, the district was unusually expanded and reflected the area where townspeople owned vineyards. Those possessing vineyards outside of the said district had to provide proof that the grapes had been grown on their properties. Citizens could bring in their own harvest as well as grapes and must bought from others in this delimited area until Saint Martin's Day. According to what is known from later periods, an allowance for bringing purchased grape must into town was by no means the rule and depended on the size of the vintage. The tax rate for purchased must was twice as high as the rate for must grown by the citizens in their own vineyards, and in 1461, everyone introducing purchased must had to bring an equivalent amount of grain into town. All those who cultivated their vineyards by sharecropping and bought up the shares of the cultivators, as well as those farming wine tithes, were liable to the tax rate for purchased wine must. Finally, the prohibition for introducing Hungarian or any other foreign wine into the city, going back to the thirteenth century, was enforced once again.[23]

During the vintage season all other businesses in the town came to a standstill. Even the city council suspended its sessions and proceedings. Given the fact that 108 winepresses were counted within the city walls in 1566, a significant share of the vintage was processed within the city, although king Ferdinand I had attempted to prohibit this for sanitary reasons in 1563.[24] That the city authorities were willing to safeguard the vintage by all possible means, became clear during the siege by the Hungarian king Matthias Corvinus in 1483, when the city – to the dismay of its overlord emperor Friedrich III – paid a ransom of 3,000 Hungarian florins to bring in the grape harvest.[25]

The peculiarities of the Viennese tax system allow us to determine the proportion of taxpayers bringing in a wine harvest. At the turn of the sixteenth century no less than a third of all taxed households and 53 per cent of all house-owners within the city walls owned vineyards and were therefore liable to pay the tax for bringing their harvest into the city and its suburbs (Table 1). For the sixteenth century, tax assessments are preserved for one quarter of the city (with suburbs) only. Their analysis suggests a decline in the proportion of taxpayers involved in vine-growing by 10 per cent over the course of the sixteenth century. Since Vienna had no significant export trade in industrial goods, it is obvious that wine production and the wine trade constituted the largest and most important sector of the urban economy during this period.

According to the tax registers, slightly more than half of those paying the wine tax at the beginning of the seventeenth century were craftsmen and traders. 13 per cent of all craftsmen in town were in some way related to wine production as coopers, transporters of wine

23 The ordinance is edited in Zeibig (ed.), Copey-Buch, 271–276.

24 Landsteiner, Weinbau und bürgerliche Hantierung, 21.

25 Ferdinand Opll/Richard Perger, Kaiser Friedrich III. und die Wiener 1483–1485 (Forschungen und Beiträge zur Wiener Stadtgeschichte 24), Wien 1993, 45.

casks, and bartenders employed in the retailing of wine. Of particular interest is the group of citizens without any specified occupation: they comprised 25 per cent of all taxpayers, but produced 50 per cent of the recorded quantity of must or grapes introduced into the city in 1618.[26] This suggests that a substantial part of the wealthier citizens was composed of landowners producing wine.[27]

An essential prerequisite for this ample property of vineyards by the citizens of Vienna was a specific property right. Land planted with vines, although liable for rent in money and in kind to the landlord (in the sense of *dominium directum* versus *dominium utile*), could be freely sold, partitioned, and transferred through inheritance, and, most importantly, its possession entailed no subjection to the lord of the land. These were exactly the terms of the specific urban property land right held by citizens (called *Burgrecht*, whereas vineyards were held under conditions of *Bergrecht*). Town charters limited the rights of interference of landlords in many ways, especially the taking of rents and the timing of the vintage.[28]

Table 1: Number of wine producers and amount of wine harvest in Vienna, sixteenth to seventeenth centuries (according to tax assessments)

	Number of taxpayers	Taxpayers with wine harvest		Harvest (hl)
		n	%	
Widmer quarter with suburbs 1527	969	407	42	18,515
Widmer quarter with suburbs 1618	684	221	32	29,670
City ca. 1600	1,734	572	33	51,852
City and suburbs 1618	2,583	833	32	109,884
City and suburbs 1650	2,314	649	28	26,518
City 1681	1,717	552	32	46,152

Sources: Wiener Stadt- und Landesarchiv (WStLA), Tax assessment registers, series 1.1.3.1: B4.11 (Widmer quarter 1527); B4.13 (Widmer quarter 1618); B2.1, B3.1, B4.12, B5.1 (City ca. 1600 – 1616 for the Widmer quarter); B2.19, B3.17, B4.13, B5.18 (City and suburbs 1618); B2.51, B3.48, B4.30, B5.39 (City and suburbs 1650); B2.82, B3.79, B4.61, B5.70 (City 1681).

The amount of wine registered in the tax assessments poses some problems of interpretation. It is evident that it was determined by the size of the vintage, and I suppose that this relates to the vintage of the previous autumn of the assessment year. Figures are always rounded, and the smallest amount recorded is half of a *Dreiling* containing twelve buckets of 58 litres each or 796 litres. By drawing on the yields of the vine-growing estate of the Vienna City Hospital, the biggest wine producer in town, it is possible to estimate the vineyard area of

26 Dominik Schiesser, Die Wiener Gewerbe im Spiegel des Steuerregisters des Jahres 1618, unprinted diploma thesis, University of Vienna 2019, 37.

27 This sheds some light on the so-called *Erbbürger* ("hereditary citizens"), a social group long discussed in the historiography on medieval Vienna. Cf. Friedrich Walter, Beiträge zur älteren Wiener Sozial- und Wirtschaftsgeschichte, in: Mitteilungen des Vereins für Geschichte der Stadt Wien 15 (1935), 42–62.

28 See, for example, the charter for Vienna 1296, edited in: Johann A. Tomaschek (ed.), Die Rechte und Freiheiten der Stadt Wien, vol. 1, Wien 1877, no. XXII, 69–75, 72.

the harvest figures. 1617 (34.5 hl/ha) and 1680 (48.2 hl/ha) were years with copious wine harvest, 1599 (27.4 hl/ha) was about average, whereas in 1649 (5.8 hl/ha) the vintage resulted in a disaster. Dividing the harvest amounts stated in the tax assessments by these yields we arrive at the following estimates of the vineyard area farmed by the citizens of Vienna: 1,892 hectares in 1600 (without suburbs), 3,189 hectares (with suburbs) in 1618, 4,567 hectares (with suburbs) in 1650, and 947 hectares (without suburbs) in 1680. The estimate for 1650 is wholly implausible, but those for 1600 and 1680 could be accurate, which would suggest a 50 per cent decline over the course of the seventeenth century.

Although Table 1 seems to suggest that the picture just presented did not change much over the course of the seventeenth century, this is mistaken insofar as already in 1563 only 62 per cent of all households were taxed by the city magistrate; the rest, being composed of members of the court, the clergy, civil servants, university members, and the nobility, was not under the fiscal authority of the city. During the seventeenth century, this proportion shifted more and more in favour of the later groups.[29] At the turn of the seventeenth to the eighteenth century the old regulations of the wine market were abolished. The 440,000 hl of wine introduced into the city in 1730,[30] now the booming centre of a vast central European empire, came from all over Lower Austria and Moravia. Vienna had obviously switched from a wine production to a wine consumption city.

The labour market and its regulation

In the tax assessment of the Widmer quarter for 1527, 191 out of the 969 taxpayers (19.7 per cent) were registered as vine-dressers (*Hauer*). 174 of them lived in the suburbs of this quarter and 97 (50.8 per cent) were assessed for their wine harvests. Since the term *Hauer* included small growers as well as vineyard labourers, this indicates that half of them were wage labourers without any landed property. Their numbers declined steeply over the course of the sixteenth century and in 1618 only 50 taxpayers designated as *Hauer* were registered in the entire city (including suburbs). The reason for this decline seems to have been connected to the rearrangement of the suburbs after the first siege of Vienna by Ottoman troops in 1529. During the siege the suburbs were completely destroyed and the government intended to house these homeless inhabitants within the city walls. The negative response of the city council to this plan contains information about the economic situation and living conditions of the suburban vine-dressers. It was stressed that they were much too poor to dwell in the city, that they would lose several hours of worktime due to the fact that the city gates opened too late in the morning and closed too early in the evening, that they tended animals which could not be kept within the city limits, and that they used dried vine-shoots to heat their dwellings, which would create a continuing threat of fire outbreaks. The most telling argument was, however, that these people were an unruly folk, having caused much trouble in the past. Therefore, the council suggested allowing them to build wooden dwellings in

29 Elisabeth Lichtenberger, Die Wiener Altstadt, Wien 1977, 101.

30 Erich Landsteiner, Weinbau und Alkoholproduktion. Eine langfristige Perspektive (16.–19. Jahrhundert), in: Österreich in Geschichte und Literatur 48/5 (2004), 266–284, 278.

the suburbs at a certain distance from town, which could easily be burned down in case of danger. Otherwise they would settle elsewhere and the citizens would lose their workforce.[31]

Viennese vineyard owners cultivated their vineyards by hiring wage labourers. Wage labour was the common form of labour recruitment in urban viticulture all over Europe, and disputes about wage levels, working time, and other features of the labour contract occurred frequently.[32] To handle these conflicts towns and their lords devised and implemented rules and regulations for setting wages, regulating work hours, and disciplining the labourers. Following the implementation of labour laws in the aftermath of the Black Death, this kind of legislation started during the fifth decade of the fourteenth century in Vienna, in the form of daily wage rates for vine-dressers. They were to be hired at specific hiring places, outside the city gates and in the surrounding villages.[33]

In the fourteenth and early fifteenth century male and female workers were expected to be hired by the day.[34] Later on contracts for the cultivation of single vineyards over the whole season became the rule. Thus, a two-tiered labour force took shape: resident vine-dressers, frequently organized in guilds and brotherhoods, contracted with vineyard owners for the cultivation of their vineyards and hired, if necessary, labourers themselves either by the day or throughout the season. The vine-dressers visible in the tax assessments can be identified with the first group, whereas the second group, often single migrant workers, hired and housed by the members of the first group or living as lodgers, are not reflected in the tax registers. Since the more substantial growers of Vienna frequently owned houses in the suburbs, it is plausible that they used them for housing migrant labourers. These labourers, called *ledige Hauerknechte* (single or independent vine-dressers' servants), became the main target of extended vine-growing ordinances of the sixteenth and seventeenth centuries. A first one was published in 1534 for the Viennese vine-growing district (in accordance with the area outlined above). Others followed in 1540 and 1548 for the other vine-growing centres of the country. From this point on, representatives of the local communities assembled at the beginning of the year in the Vienna city hall to set up wage rates and to discuss current problems. A major concern in all these ordinances was the frequent absconding of labourers during the working season. Labourers were required to carry passports testifying that they had not run away from their former employer without his consent. Another pressing problem was the lacking qualification of migrant labourers. As a remedy, apprenticeship terms were imposed. Inexperienced workers had to learn from a resident vine-dresser over a period of two to three years to acquire the necessary skills.[35]

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31 The report, dated 30 July 1530, is edited in: Notizenblatt der kaiserlichen Akademie der Wissenschaften 8 (1858), 289–291.

32 See for examples from other vine-growing towns and regions: Marcel Delafosse, Notes d'histoire sociale. Les vignerons d'Auxerrois (XIVe–XVIe siècles), in: Annales de Bourgogne 77 (1948), 7–41; Alessandro Stella, Un conflit du travail dans les vignes d'Auxerre aux XIVe et XVe siècles, in: Histoire et Sociétés Rurales 3/1 (1996), 221–251; Knut Schulz, Handwerksgesellen und Lohnarbeiter. Untersuchungen zur oberrheinischen und oberdeutschen Stadtgeschichte des 14. bis 17. Jahrhunderts, Sigmaringen 1985, 343–361.

33 The relevant edicts are edited in Tomaschek (ed.), Rechte und Freiheiten der Stadt Wien, vol. 1, no. XLVII (1352), XLVIII (1353), LXVII (1364), vol. 2, no. CVII (1412).

34 For this paragraph and source references see Erich Landsteiner, Einen Bären anbinden, in: Österreichische Zeitschrift für Geschichtswissenschaften 4/2 (1993), 218–252.

35 For the institution of apprenticeship for wine-dressers in other vine-growing towns see Francoise Michaud-Frejaville, Apprentis et ouvriers vignerons. Les contrats à Orleaons au XVe siècle, in: Le vigneron, la viticulture

This massive and oppressive legislation could not reconcile a major contradiction behind all these conflicts: rapidly declining real wages of the labourers, especially during the second half of the sixteenth century. It actually contributed to the problem by setting strict limits on nominal wage rates. The situation exploded in April 1597 when large numbers of migrant workers went on strike in the Viennese vine-growing district demanding higher wages. The revolt was brutally suppressed within a few days and the leaders were executed or condemned to forced labour.[36] In any case, this reveals how far off the base established opinions about a low grade of social differentiation and absent class conflicts in so-called agrarian towns is.

Retz

In the sixteenth century, all other towns of Lower Austria, consisting of 100–300 houses and perhaps 1,000–5,000 inhabitants, were tiny in comparison to Vienna. 14 out of 18 towns (including four "markets") under the direct jurisdiction of the Habsburg rulers relied economically on vine-growing. Retz, at the border to Moravia, was among the smallest. The town presided over an area comprising nine villages, whose territories were densely planted with vines. No foreign wine was allowed to enter this district in order to protect the reputation of the local *cru*. Based on the trading privileges in its charter and an extensive network of cellars,[37] the town was the central storage place and the hub of the wine trade in the region. Every year in autumn and spring, caravans of horse-drawn wagons arrived from Bohemia and Moravia to carry the barrels, marked by the coat of arms of the town of Retz, to places for consumption.

At the end of the sixteenth century, 90 per cent of the citizens of this small town owned land, consisting of 262 hectares of vineyards and 119 hectares of arable land. Vineyards made up for half of all assets valued for tax purposes. Slightly more than half of the 116 citizens in 1590 lived solely from their wine production and wine trade, and less than 10 per cent based their livelihood exclusively on craft production and the non-wine trade, whereas 46 per cent combined craft and agrarian production (Tables 2 and 3).[38]

After the severe disruptions of the Thirty Years' War, during which the number of citizens was reduced to 66, the extent of citizens' vineyard property declined to 58 hectares in 1665. Although it recovered during the following century, it never again attained the level of the late sixteenth century. On the other hand, the role of craft production increased and by middle of the eighteenth century 83 per cent of the citizens were artisans or traders. What is not clear from these figures is the importance of the wine trade based on the privilege of the town, which amounted to a monopoly of the citizens on the local intermediary trade in wine.

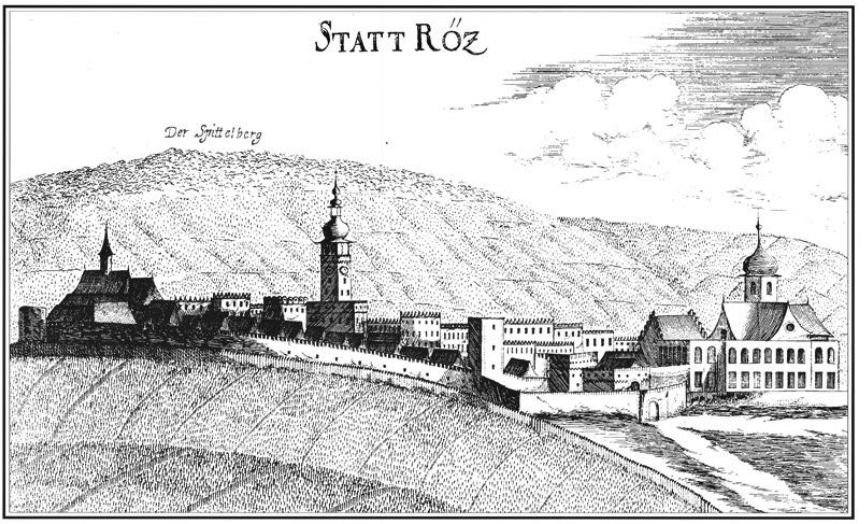
et la vinification en Europe occidentale au Moyen Age et à l'époque modern (Flaran 11), Auch 1991, 273–286; Schulz, Handwerksgesellen, 361 (Colmar).

36 Landsteiner, Einen Bären anbinden, 251–252.

37 Erich Landsteiner, Cellars in town and countryside. Wine storage architecture and the social relations of production in East Central Europe, in: Douro – Estudos & Documentos 7/3 (2002), 125–133.

38 Landsteiner, Weinbau und Gesellschaft, 158–168.

Figure 2: View of Retz. Engraving by Georg Matthäus Vischer (1672)



Source: By courtesy of the Town Archive Retz.

Table 2: Economic structure of the town of Retz (Lower Austria), 1558–1746 (percentage of citizens owning assets based on tax registers)

	1558	1590	1665	1702	1746
Only house property	11.7	0.9	10.6	1.9	2.8
House and land property	50.0	53.4	36.4	14.7	13.9
House and craft production	7.4	7.8	9.1	24.5	17.6
House, land, and craft	30.9	37.9	43.9	57.8	65.7
Artisans and traders	38.3	45.7	53.0	82.3	83.3
Landowners	80.9	91.3	80.3	72.5	79.6
n	90	116	66	102	108

Table 3: Composition of property assets of the citizens of the town of Retz (Lower Austria) according to tax assessments, 1558–1746 (percentages of assets by value)

	1558	1590	1665	1702	1746
Houses	42	40	28	46	46
Craft and trade	10	6	24	35	25
Land	48	54	48	19	29
(Vineyards)	(43)	(51)	(40)	(14)	(?)
Total	100	100	100	100	100

For the source references of Table 2 and 3, see Erich Landsteiner, Weinbau und Gesellschaft in Ostmitteleuropa, unprinted doctoral thesis, University of Vienna 1992, 158–168.

Controlling and dominating the wine market

Over the course of the seventeenth century the social base of wine production in Lower Austria underwent a massive restructuring. Falling relative prices of wine, due to the loss of export markets and changing consumer preferences (the rise of beer consumption in Central Europe), the subsequent decline in the profitability of vine-growing conducted with waged labour, and the general crisis of the urban sector of the economy caused by the Thirty Years' War, led to a contraction of urban viticulture. Vine-growing became rural, carried out now mainly by smallholders drawing on their household labour force. Under these circumstances, members of privileged urban communities invested with trading rights began to concentrate on trade in wine and ceded the production of the 'raw material' to the rural population.

Although wine production was a thoroughly commercialized sector of the agrarian economy, the wine market was neatly regulated. Most settlements in Lower Austria limited the introduction and storage to wine grown on their territory by local inhabitants. Vine-growers usually did not trade their wine actively and waited for buyers who came to them. The local trade in wine in the sense of buying, storing, and reselling was the prerogative of privileged actors.[39] On the northern frontier of wine production, the unstable yields, with a huge range of variation from one vintage to the next, made speculative behaviour extremely attractive. Buying cheap on the occasion of a bumper harvest from small growers obliged to sell their produce under any circumstance shortly after the harvest and selling at a high price after a small harvest was a lucrative option for all those with the necessary rights, capital, and storage facilities.

The town of Retz was particularly well equipped for this purpose. It had an extensive network of wine cellars within the town's walls and, although having no territory of its own, it dominated a hinterland that included nine villages. Villagers could sell their wine to buyers coming from the outside, but according to the charter of the town only the citizens of Retz had the right to buy wine-must and wine in this district, to store, age, and resell them to visiting customers. This privilege, first documented in a decree from 1486, became the major object of contention between the town and inhabitants of the surrounding countryside, who were eager to participate in this lucrative business after the majority of vineyards were passed into the hands of the village population during the crises of the seventeenth century. Ever since the late seventeenth century, town authorities used every means of confirmation of this privilege to adapt it to the new constellation of town and countryside. The time limit for the introduction of wine purchased from village producers was increasingly extended, up to February, reflecting the mounting capacities to process grapes and store the wine in the village cellars. Legal action was taken against everyone trying to participate in intermediary trade in wine within the district of the town. In the last confirmation of the privilege (1756) unauthorized dealers (i.e. everyone except the burghers of the town) were threatened with heavy fines for disobedience. Only twelve years later, privileges of this kind were abolished and the free trade in agrarian commodities finally was conceded to all producers.[40]

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39 Landsteiner, Weinbau und Gesellschaft, 238–252.

40 Ibid., 252–274. See the decree on free trade in agrarian commodities, dated 10 Sept. 1768, in: Joseph Kropatschek (ed.), Sammlung aller k. k. Verordnungen und Gesetze vom Jahre 1740 bis 1780 […], vol. 5, Wien 1786, no. 1039, 370.

Johannes Koder

Landwirtschaft beiderseits der Stadtmauern

Konstantinopels Versorgung mit Gemüse aufgrund der *Geoponika*

Abstract: Agriculture on Both Sides of the City Walls. The Vegetable Supply of Constantinople According to the Geoponika. The supply of everyday food for the great mass of the population of the Byzantine Empire changed over the period of more than a millennium, though slowly. It depended on the geological and climatic conditions of agriculture, which – within a territory extending over up to roughly 1.5 million km^2 in the Middle Byzantine period – differed from region to region. Constantinople, from the fourth to the fifteenth century the capital of the Byzantine Empire, and subsequently until the early twentieth century that of the Ottoman Empire, was a special case: it was a *megalopolis*. Constantinople could not rely on its hinterland alone and therefore had to develop a system of logistics, in which transportation depended among other factors on the durability of the foodstuffs. Fresh or preserved (salted) vegetables, pulses, olives, and fruits constituted an important proportion of everyday food not only during Lent, but throughout the year (though many fresh vegetables and fruits were only available seasonally). Chapter 12.1 of the *Geoponika*, a tenth-century collection of agricultural lore, provides "Information about what is sown and what is planted out (or replanted) month by month in the latitude of Constantinople" (title). The contents of this source and its significance for our knowledge of farming in and near Constantinople are discussed in this paper.

Key Words: vegetables, food supply, *Geoponika*, Constantinople, urban/peri-urban agriculture

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Der Beitrag beruht auf langjährigen Forschungen des Autors zu diesem Thema, vgl. Johannes Koder, Gemüse in Byzanz. Die Frischgemüseversorgung Konstantinopels im Licht der Geoponika (Byzantinische Geschichtsschreiber, Ergänzungsband 3), Wien 1993; ders., Lebensmittelversorgung einer Großstadt: Konstantinopel, in: Falko Daim/Jörg Drauschke (Hg.), Hinter den Mauern und auf dem offenen Land – Leben im Byzantinischen Reich (Byzanz zwischen Orient und Okzident 3), Mainz 2016, 31–44; ders., Ernährung und Lebensmittelversorgung, in: Falko Daim (Hg.), Byzanz. Historisch-kulturwissenschaftliches Handbuch (Der neue Pauly, Supplementband 11), Stuttgart 2016, 642–648.

Vorbemerkungen

Zur Vergleichbarkeit von Byzanz und „Lateineuropa"

Das im Südosten an Europa teilhabende Byzantinische Reich (bzw. von 1453 bis 1922 das Osmanische Reich als dessen politischer Erbe) und die Staaten des Großteils von Europa unterscheiden sich in vieler Hinsicht in ihren religiösen und religiös-ideologisch geprägten politischen Strukturen. Die nicht oder nur zum Teil anthropogenen Rahmenbedingungen – Klima, Geologie und Oberflächengeografie, auch Pandemien – betrafen jedoch beide Großräume in Hinblick auf gemeinsame Voraussetzungen der materiellen Existenz, wie Landwirtschaft, (nomadische) Viehzucht, Rohstoffgewinnung und Gütertransport. Existenzgefährdende Veränderungen dieser Bedingungen, insbesondere des Klimas, bewirkten zudem (oft unvorhersehbare) Migrationen. All dies gilt besonders für siedlerische Verdichtungsräume, vor allem für Städte und deren Umland. Daraus ergibt sich die Sinnhaftigkeit, die Versorgung von Konstantinopel – Hauptstadt des Byzantinischen Reiches und nach den bis weit in die Neuzeit gültigen Parametern eine Großstadt – darzustellen, soweit dies die Quellen ermöglichen.

Territoriale und demografische Merkmale des Byzantinischen Reiches

Das spätantike Imperium Romanum hatte eine Flächenbedeckung von etwa 3,8 Millionen km², für die eine Bevölkerungszahl von bis zu 75 Millionen vermutet wird. Nach der schrittweise erfolgten Verselbstständigung der östlichen Reichshälfte mit einer Fläche von etwa 1,4 Millionen Quadratkilometern schwanken die Bevölkerungsschätzungen für den Osten zwischen 24 und 26 Millionen Einwohnern und Einwohnerinnen. Ein entscheidender demografischer Einschnitt erfolgte im 6. Jahrhundert durch die sogenannte „justinianische Pest", die von Ägypten ausgehend ab 541 nahezu das gesamte Territorium des ehemaligen Römischen Reiches erfasste und bis zur Mitte des 8. Jahrhunderts in mehreren Schüben wiederkehrte. In der nunmehrigen *Basileia ton Romaion* („Kaiserreich der Römer", so die Selbstbezeichnung des Byzantinischen Reiches) führte die Seuche wahrscheinlich zu einer Bevölkerungsreduzierung um nahezu ein Drittel. Weitere erhebliche Verluste wurden durch die Perserkriege des 6. und 7. Jahrhunderts, die Landnahme in der Balkanhalbinsel durch Slawen und Bulgaren ab dem ausgehenden 6. und die arabisch-muslimische Expansion ab dem frühen 7. Jahrhundert bewirkt, sodass die Reichsbevölkerung im späten 7. Jahrhundert etwa zwölf Millionen gezählt haben dürfte.[1] Nach schrittweisen Rückeroberungen, vor allem in Asien, verbunden mit einer wirtschaftlichen Erholung, umfasste das Reichsterritorium zwischen dem 10. und dem 12. Jahrhundert schließlich erneut etwa 1,5 Millionen Quadratkilometer mit bis zu 19 Millionen Einwohnerinnen und Einwohnern.[2]

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1 Dionysios Stathakopoulos, Population, Demography, and Disease, in: Robin Cormack/John Haldon/Elizabeth Jeffreys (Hg.), The Oxford Handbook of Byzantine Studies, Oxford 2008, 309–316; Wolfram Brandes, Die Pest in Byzanz nach dem Tode Justinians (565) bis 1493, in: Mischa Meier (Hg.), Pest. Die Geschichte eines Menschheitstraumas, Stuttgart 2005, 201–224, beide mit älterer Literatur.

2 Noch die erste einigermaßen genaue Volkszählung des Jahres 1893 ergab für die europäischen und kleinasiatischen Teile des Osmanischen Reiches (inklusive der Ägäis-Inseln) eine Bevölkerungszahl von 18,8 Millionen;

Aus der Flächenerstreckung der mittelalterlichen Kernräume des Byzantinischen Reiches (Teile Südosteuropas, Kleinasien mit anschließenden Teilen der Kaukasusregion und des Nahen Ostens, die Inseln der Ägäis, Zypern und Teile der Küstengebiete des östlichen Mittelmeeres und des Schwarzen Meeres) ergeben sich regional unterschiedliche geologische und klimatische Voraussetzungen der Versorgung mit Nahrungsmitteln und anderen Rohstoffen (vor allem Holz). Selbst wenn man davon ausgeht, dass die natürlichen Grundlagen in diesem Zeitraum weitgehend stabil blieben und die Entwicklung der Lebensgewohnheiten im Bereich der Produktion von Nahrungsmitteln und anderen Gütern des Alltags im Verlauf des gesamten byzantinischen Jahrtausends langsam voranging, gab es doch stetig kurzzeitige Veränderungen. Diese konnten durch Naturereignisse – nicht nur Seuchen, sondern auch Klimaschwankungen, besonders Kälteeinbrüche und Dürreperioden[3] – und durch militärische und politische Ereignisse (verbunden mit Migrationen) zeitweise eine erhebliche Dynamik erfahren.[4]

Die Bevölkerung des Reiches bestand im 9. bis 12. Jahrhundert vor allem aus Bewohnern und Bewohnerinnen des Offenlandes, also aus Landwirtschaft treibenden Grundbesitzern, Bauern und Pächtern sowie (teilweise nomadischen) Viehzüchtern. Groß war weiters der Anteil an Mönchen und Nonnen (zeitweise wahrscheinlich bis zu 15 Prozent der Bevölkerung),[5] schließlich an Soldaten des Kaisers und Milizen der Großgrundbesitzer (bzw. des Adels). Stadtbewohner und Stadtbewohnerinnen waren deutlich in der Minderheit, wobei die Städte in den meisten Fällen keine besonderen logistischen Maßnahmen erforderlich machten, da sie angesichts der geringen Einwohnerzahl – unabhängig davon, ob diese städtischen Siedlungen unbefestigt waren oder aus einer festungsartigen Oberstadt mit einer unbefestigten Vorstadt bestanden oder über einen Mauerring verfügten – aus dem engeren Umland versorgt werden konnten.

Die Großstadt Konstantinopel

Eine der wenigen Ausnahmen war Konstantinopel (heute Istanbul), vom 4. bis zum 15. Jahrhundert Sitz der Kaiser und Hauptstadt des Byzantinischen Reiches und vom 15. bis zum frühen 20. Jahrhundert Sitz des Sultans und Hauptstadt des Osmanischen Reiches. Die mittelalterliche Stadt lag auf der europäischen Seite des Bosporus, wo dieser sich zum Marmarameer öffnet. Istanbul hat ein ausgeglichenes maritimes Klima mit dominanten Winden

Kemal H. Karpat, Ottoman Population 1830–1914, Madison 1985, 122–151. – Die hier genannten Bevölkerungsschätzungen von 75 bzw. 24 bis 26 bzw. 19 Millionen entsprechen den folgenden Bevölkerungsdichten: 19,1 bzw. 17,1 bis 18,6 bzw. 12,7 EinwohnerInnen/km². Vgl. hierzu Johannes Koder, Der Lebensraum der Byzantiner. Historisch-geographischer Abriß ihres mittelalterlichen Staates im östlichen Mittelmeerraum (Byzantinische Geschichtsschreiber, Ergänzungsband 1), 2. Aufl., Wien 2001, 150–154.

3 Ein Beispiel: Zum Jahr 928 berichtet Johannes Skylitzes (Ioannis Scylitzae synopsis historiarum, hg. v. Hans Thurn [Corpus Fontium Historiae Byzantinae, Bd. 5], Berlin/New York 1973, 225) über eine katastrophale Kälte, während der der Boden 120 Tage lang ununterbrochen gefroren blieb, gefolgt von Hungersnot und Massensterben.

4 Johannes Koder, Die Byzantiner. Kultur und Alltag im Mittelalter, Wien/Köln/Weimar 2016, 49–62.

5 Der Anteil der nicht dem Mönchsstand angehörigen Priester ist in diesem Zusammenhang insofern nicht separat auszuweisen, als sie den Landbewohnern (verheiratete Ortspfarrer) bzw. den Städtern (Episkopalklerus, in Konstantinopel auch Beamte) zuzurechnen sind.

aus der Richtung des Schwarzen Meeres. Die Durchschnittstemperatur liegt im Februar über fünf Grad Celsius, im August über 23 Grad Celsius, mit jährlichen Niederschlägen von mehr als 800 Millimetern.

Das antike Byzantion,[6] von Konstantin dem Großen als seine Hauptresidenz ausgebaut, wurde nach ihm benannt. Der Kaiser umgab es mit einer (nicht erhaltenen) Stadtmauer. Diese wurde am Beginn des 5. Jahrhunderts durch eine zweite, etwa 1,5 Kilometer weiter westlich errichtete ersetzt, die teilweise bis heute erhalten ist. Dadurch wurde das befestigte Stadtareal von etwa sieben auf 12,7 Quadratkilometer und nach späteren Ausbauten auf knapp 14 Quadratkilometer erweitert. Die Wasserversorgung erfolgte durch Aquädukte, die das Wasser aus dem Bergland im Nordwesten und aus Thrakien an die Stadt heranführten; es wurde in mehreren unterirdischen Zisternen gespeichert, die im 7. Jahrhundert eine Kapazität von insgesamt etwa 900.000 Kubikmetern erreicht haben dürften. Konstantinopel hatte vor 541/542 wahrscheinlich mehr als 400.000, vielleicht sogar 500.000 Einwohnerinnen und Einwohner.[7] Nach dem Einbruch durch die „justinianische" Pest lag die Zahl spätestens ab dem 8. Jahrhundert wieder zwischen 100.000 und 200.000. Somit war Konstantinopel, aus vorindustrieller städtehistorischer Sicht, seit dem späten 5. Jahrhundert fast ununterbrochen eine Großstadt.[8]

Die Versorgung der Stadt mit Lebensmitteln und anderen Rohstoffen[9] konnte somit nicht allein aus dem Umland der Stadt in Thrakien erfolgen. Daher wurden die Häfen am Goldenen Horn und an der europäischen Küste des Marmarameeres bereits frühzeitig erweitert oder neu gebaut, so der Theodosios-Hafen, der seit dem 4. Jahrhundert die Anlieferung der staatlich organisierten Versorgung mit Getreide (der *Annona*) aus Alexandreia in Ägypten erleichterte.[10] Getreide diente als Basis der wichtigsten Grundnahrungsmittel, nämlich des Brots (*artos, psomion*), des Zwiebacks (*paximadion*) und des in der Frühzeit weit verbreiteten, suppigen Getreidebreies *atheras*.

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6 Wolfgang Müller-Wiener, Bildlexikon zur Topographie Istanbuls. Byzantion – Konstantinupolis – Istanbul bis zum Beginn des 17. Jahrhunderts, Tübingen 1977; ders., Die Häfen von Byzantion – Konstantinopolis – Istanbul, Tübingen 1994; Marcell Restle, Konstantinopel, in: Reallexikon zur byzantinischen Kunst Bd. IV, Stuttgart 1990, 366–737; Peter Schreiner, Konstantinopel. Geschichte und Archäologie, München 2007; Klaus Kreiser, Geschichte Istanbuls von der Antike bis zur Gegenwart, München 2010; Johannes Koder, Byzantion wird Konstantinupolis: Anmerkungen zu Ortswahl und Namen, in: Cécile Morrisson/Jean-Pierre Sodini (Hg.), Constantinople réelle et imaginaire autour de l'oeuvre de Gilbert Dagron (Travaux et Mémoires 22/1), Paris 2018, 21–33.

7 Stathakopoulos, Population, 310–311; Koder, Die Byzantiner, 72–74.

8 Jim Crow, The Infrastructure of a Great City: Earth, Walls and Water in Late Antique Constantinople, in: Luke Lavan/Enrico Zanini/Alexander Sarantis (Hg.), Technology in Transition A.D. 300–650 (Late Antiquity Archaeology 4), Leiden/Boston 2007, 251–285.

9 Koder, Die Byzantiner, 74–79; Jean Durliat, L'approvisionment de Constantinople, in: Cyril Mango/Gilbert Dagron (Hg.), Constantinople and its Hinterland. Papers from the Twenty-Seventh Spring Symposium of Byzantine Studies, Aldershot 1995, 9–33; Johannes Koder, Maritime Trade and the Food Supply for Constantinople in the Middle Ages, in: Ruth Macrides (Hg.), Travel in the Byzantine World, Aldershot 2002, 109–124. Für das osmanische Istanbul nach wie vor grundlegend: Rhode Murphey, Provisioning Istanbul: The State and Subsistence in the Early Modern Middle East, in: Food and Foodways 2 (1988), 217–263.

10 Andreas E. Müller, Getreide für Konstantinopel, in: Jahrbuch der Österreichischen Byzantinistik 43 (1993), 1–20; Koder, Gemüse in Byzanz, 99–108; Paul Magdalino, The Grain Supply of Constantinople, Ninth–Twelfth Centuries, in: Mango/Dagron (Hg.), Constantinople, 35–47; Vivien Prigent, Le stockage du grain dans le monde byzantine (VII^{e}–XII^{e} siècle), in: Mélanges de l'École française de Rome. Moyen Âge 120 (2008), 7–37.

Den durch die widrigen Meeresströmungen und Winde in den Dardanellen verursachten Verzögerungen der Getreideanlieferung trat Justinian I. im frühen 6. Jahrhundert durch den Bau eines Getreidespeichers auf der vor der Einfahrt in die Dardanellen gelegenen Insel Tenedos entgegen; dieser ermöglichte eine Zwischenlagerung des ägyptischen Getreides und vermochte „eine vollständige Flottenladung" aufzunehmen.[11] Als die Versorgung durch die *Annona* 618/619 endete, konnte die dann wesentlich geringere Zahl an Einwohnern und Einwohnerinnen aus Thrakien und dem westlichen Kleinasien versorgt werden. Der Brotpreis war festgelegt und sollte nur vom Gouverneur (*eparchos, praefectus*) der Stadt auf begründeten Antrag geändert werden.[12] Engpässe bei der Lebensmittelversorgung konnten dennoch auftreten, etwa angesichts von Dürrejahren oder Belagerungen. Als beispielsweise Kaiser Artemios 714 erfuhr, dass ein großer Angriff der Araber bevorstehe, befahl er, „dass ein jeder für sich Vorsorge an Vorräten für bis zu drei Jahren treffe; wer aber dazu nicht imstande ist, solle die Stadt verlassen".[13]

Grundnahrungsmittel waren – neben dem zu jeder Mahlzeit genossenen Brot – Oliven, Olivenöl und Käse, worauf sogleich Obst und bestimmte Gemüsearten (allen voran die Zwiebel) folgten, und erst mit Abstand tierische Produkte wie Fisch, Fleisch, Milch und spezielle Käsesorten.[14] Die Konsummengen der tierischen Produkte waren wesentlich durch die Anschaffungskosten und die kirchlichen Fastenvorschriften gesteuert. Fangfrischer Fisch[15] und frisches Fleisch von Schaf, Lamm, Ziege und Schwein (auch Wildschwein) waren beliebt und teuer,[16] wie auch die diesbezüglichen Bestimmungen des Eparchenbuches zeigen.[17] Auch

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11 So Prokop, De aedificiis, hg. v. Jacob Haury/Gerhard Wirth, Procopii Caesariensis Opera omnia Bd. IV, Leipzig 1964, 5.1.7–16.

12 Das sogenannte Eparchenbuch, eine um 900 niedergeschriebene Sammlung von Zunftordnungen für Konstantinopel, legte im Kapitel „Über die Bäcker" (18. Περὶ τῶν ἀρτοποιῶν ἤτοι μαγκίπων) fest: (18.1) „Die Bäcker sollen entsprechend dem Ankauf des Getreides auf Weisung des Eparchen auch die Gewichte anfertigen. Sie sollen zunächst für ein Nomisma das geeignete Getreide kaufen, dieses vor dem Assessor (des Eparchen) mahlen und säuern und dann als Gewinn je Nomisma ein Keration und zwei Miliarisia rechnen, das Keration als Gewinn, die Miliarisia aber für den Unterhalt ihrer Leute und des mahlenden Arbeitstieres, sowie für die Miete, das Heizmaterial des Backofens und die Fackeln", weiters (18.4): „Selbige sollen sich, sooft eine Erhöhung oder eine Minderung des (Preises des) Getreides stattfindet, zum Eparchen begeben, damit durch den Assessor die Brotmaße für den Verkauf festgelegt werden"; Johannes Koder, Das Eparchenbuch Leons des Weisen, Einführung, Edition, Übersetzung (Corpus Fontium Historiae Byzantinae 33), Wien 1991. – Die Standardmünze Nomisma (entsprechend lat. *Solidus*, Gold, 4,444g) war in 12 Miliarisia (lat. *Miliarense*, Silber) bzw. 24 Keratia (lat. *Siliquae*, Silber) unterteilt; der Gold- bzw. Silbergehalt der Münzen war theoretisch 100%, lag jedoch bereits zur Zeit des Eparchenbuches etwas darunter.

13 Theophanes zum Jahr 6206 in: Carl de Boor (Hg.), Theophanis chronographia, Bd. I, Leipzig 1883, 384.

14 Hierzu beispielsweise David Jacoby, Cretan Cheese: A Neglected Aspect of Venetian Medieval Trade, in: Ellen E. Kittell/Thomas F. Madden (Hg.), Medieval and Renaissance Venice, Urbana/Chicago 1999, 49–68, bes. 49–50 und 58.

15 Gilbert Dagron, Poissons, pêcheurs et poissonniers de Constantinople, in: Mango/Dagron (Hg.), Constantinople, 57–73.

16 Johannes Koder, Lebensmittelversorgung einer Großstadt: Konstantinopel, in: Falko Daim/Jörg Drauschke (Hg.), Hinter den Mauern und auf dem offenen Land. Leben im Byzantinischen Reich (Byzanz zwischen Orient und Okzident, Bd. 3), Mainz 2016, 31–44, 34–35; zu Schwein und Wildschwein siehe Eduard Liechtenhan (Hg.), Anthimi De observatione ciborum ad Theodoricum regem Francorum epistula (Corpus medicorum Latinorum 8.1), 2. Aufl., Berlin 1963, c. 4–5 und 8–10.

17 Kapitel „Über die Fleischer" (15. Περὶ τῶν μακελαρίων), „Über die Schweinehändler" (16. Περὶ τῶν χοιρεμπόρων) und „Über die Fischhändler" (17. Περὶ τῶν ἰχθυοπρατῶν), siehe Koder, Eparchenbuch. – Es sei erwähnt, dass Gemüse und Obst bei keiner der im Eparchenbuch genannten Zünfte angeführt werden, sondern

Speck, Schinken und das sehr beliebte eingesurte Fleisch (Pökelfleisch) vom Schwein konnte sich nicht jedermann leisten, wie der „Bettelprodromos" bezeugt.[18] Surfleisch wurde auch von Geflügel und im Prinzip von jedem Fleisch produziert,[19] in den nahöstlichen Reichsgebieten auch vom Kamel.[20]

Einen besonderen Einfluss auf die Essgewohnheiten hatten die von der Kirche vorgegebenen Fastenzeiten; sie umfassten insgesamt nahezu die Hälfte des Jahres.[21] Während der Fastenzeiten war der Konsum von Fleisch stets und der Konsum von Fisch, Eiern, Käse und Öl zeitweise untersagt. Grundsätzlich galten die Fastenregeln für alle Christen, also alle Einwohner und Einwohnerinnen des Reiches, und wurden von diesen wohl auch weitgehend eingehalten, sei es aus religiöser Überzeugung oder um nicht gegen gesellschaftliche Konventionen zu verstoßen. So schreibt der Patriarch Nikolaos Grammatikos (1084–1111) in einem an das geistliche Oberhaupt des heiligen Berges Athos (somit praktisch an alle Mönche) gerichteten Lehrgedicht über das Fasten, dass man lediglich einmal, um ca. 15 Uhr, Brot, Salz und Gemüse (ohne Öl) zu sich nehmen soll und dass diese Regeln nicht nur für die Mönche, sondern im Prinzip für alle Christen gelten:

> „Zunächst nenne ich dir einfach die Fastenregel für das ganze Jahr. / Welches Fasten ich meine? An den zwei Tagen, / Mittwoch und Freitag, wie die Väter sagen, / sich der Fische zu enthalten, des Öles und des Weines, / wobei sie einmal – zur neunten Stunde – das Fasten mit trockenen Speisen brechen. / Doch du als Kranker magst immerhin ein wenig Wein genießen. / […] Diese von mir verfasste Disziplin wurde von mir / nicht nur für uns Mönche allein geschrieben, / sondern für alle Gläubigen und Anhänger Christi."[22]

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lediglich im Kapitel „Über die Gemischtwarenhändler" (Περὶ τῶν σαλδαμαρίων) die haltbaren Lebensmittel „Fleisch und Fische in gepökelter Form, Räucheraal, Käse, Honig, Öl, jede Art von Hülsenfrüchten und Butter" (Eparchenbuch 13.1).

18 Theodoros Prodomos, genannt „Ptochoprodromos" („Bettelprodromos"); Hans Eideneier, Ptochoprodromos. Einführung, kritische Ausgabe, deutsche Übersetzung, Glossar, Köln 1991, Gedicht 3, passim.

19 Heinrich Beckh (Hg.), Geoponica, sive Cassiani Bassi Scholastici De re rustica eclogae, Leipzig 1895, 19.9: *Peri taricheias panton kreon*.

20 André-Jean Festugière/Lennart Rydén (Hg.), Léontios de Néapolis, Vie de Syméon le Fou et Vie de Jean de Chypre (Bibliothèque archéologique et historique 95), Paris 1974, 92.

21 Grundlegend dazu Jean Herbut, De ieiunio et abstinentia in Ecclesia Byzantina ab initiis usque ad saec. XI, Rom 1968; siehe auch Johannes Koder, Das Fastengedicht des Patriarchen Nikolaos III. Grammatikos. Edition des Textes und Untersuchung seiner Stellung innerhalb der byzantinischen Fastenliteratur, in: Jahrbuch der Österreichischen Byzantinistik 19 (1970), 203–241; weiters Wendy Mayer/Silke Trzcionka, Feast, Fast or Famine. Food and Drink in Byzantium (Byzantina Australiensia 15), Brisbane 2005, und Johannes Koder, Byzantinisches Mönchtum und Umwelt, in: Falko Daim/Henriette Baron (Hg.), A Most Pleasant Scene and an Inexhaustible Resource. Steps Towards a Byzantine Environmental History, Mainz 2017, 217–241, jeweils mit weiterer Literatur. – Die Fastenzeiten dauerten wenigstens 160 Tage, ab dem byzantinischen Jahresbeginn am 1. September: Kreuzerhöhung (14. September), sechs Wochen vor Weihnachten (ab 15. November), 5. Jänner, sieben Wochen vor Ostern, wenigstens zwei Wochen zwischen Pfingsten und dem Fest Peter und Paul (28. Juni), zwei Wochen vor Mariä Himmelfahrt (15. August), Enthauptung Johannes des Täufers (29. August), sowie jeder Mittwoch und Freitag der Wochen außerhalb der Fastenzeiten, ausgenommen die Zeit zwischen Ostern und Pfingsten.

22 Koder, Fastengedicht, 216–219, Ausschnitte aus den Versen 162–170 und 183–185.

Aus den beiden genannten Faktoren, Anschaffungskosten und Fastenvorschriften, ergibt sich die hervorragende Bedeutung von Gemüsen[23] (inklusive der Hülsenfrüchte) und Baumfrüchten (Obst, Oliven und Karoben[24]), jeweils in frischem oder (durch Trocknen oder Einsalzen) haltbar gemachtem Zustand für die ganzjährige Versorgung von Konstantinopel. Im Folgenden soll die Versorgung mit Frischgemüse behandelt werden, da hier die kurzen Wege zwischen Produzent und Abnehmer eine besondere Rolle spielen.

Agrarflächen im Nahbereich von Konstantinopel

Es ist davon auszugehen, dass das etwa sechs Quadratkilometer große Gebiet zwischen der konstantinischen und der theodosianischen Landmauer (siehe die Kartenskizze in Abbildung 1) im Mittelalter nicht dicht verbaut war, sondern vor allem Adelssitze, Villen und Klöster beherbergte,[25] sodass dort etwa zwei bis drei Quadratkilometer für Gemüseanbau verfügbar waren. Hierfür gibt es nicht nur aus spätbyzantinischer Zeit Quellenbelege (insbesondere Demetrios Kydones, Ibn Battuta, Clavijo),[26] sondern auch aus der Zeit bis um 1200: Der Chronist Theophanes spricht im 8. Jahrhundert von Gärten und Weinbergen innerhalb der Stadtmauern,[27] und in der Vita des Patriarchen Euthymios († 917) wird die Gegend um das Landgut (*oikoproasteion*) des Katakoilas, welches nahe dem Studiu-Kloster gelegen ist, am Ende des 9. Jahrhunderts als überaus lieblich und ruhig geschildert.[28] In diesem Sinn berichtet auch Odo von Deuil von seinem 1147/48 erfolgten Besuch in Konstantinopel:[29] *Latus tertium de trigono civitatis campos habet… Infra muros terra vacua est quae aratra patitur et ligones, habens hortos omne genus olerum civibus exhibentes.*[30] Weiters belegt Nikolaos Mesarites[31] um

23 Allgemein zur Bedeutung von Nahrungsmitteln auf Gemüsebasis: Michel Kaplan, Les hommes et la terre à Byzance du VI[e] au XI[e] siècle (Byzantina Sorbonensia 10), Paris 1992, 25–27, 30–32 und 44–46.

24 Byzantinische literarische Texte bezeichnen das „Bockshörndl", byz. *keration* („Hörnchen") oder *xyloglykon* („Süßholz"), die Frucht des Johannisbrotbaums, als Schweinefutter und für menschlichen Genuss verabscheuenswert; beispielsweise nennt Photios in seiner „Bibliothek" (René Henry [Hg.], Photius, Bibliotheque, Bd. 8, Paris 1959–1991), Codex 271, 502a, jemand „einen Tischgenossen der Schweine, da er *keratia* isst". Doch war die Karobe dank ihres Zuckergehaltes (bis zu 50 %) bei den Armen beliebt, vgl. Paul van den Ven (Hg.), La vie ancienne de S. Syméon Stylite le jeune, 521–592 (Subsidia hagiographica 32), Brüssel 1962, c. 216. In einigen Regionen war die Karobe die Grundlage für die Produktion einer Paste oder eines Sirups.

25 Cyril Mango, Le développement urbain de Constantinople (IV[e] – VII[e] siècles), Paris 1985, 48–49 u.a.

26 Vgl. hierzu Näheres bei Anthony Bryer, The Structure of the Late Byzantine Town: Dioikismos and the Mesoi, in: Anthony Bryer/Heath Lowry (Hg.), Continuity and Change in Late Byzantine and Early Ottomane Society, Birmingham/Washington DC 1986, 263–279, bes. 271–273.

27 Carl de Boor (Hg.), Theophanis Chronographia, I, Leipzig 1883, 423.

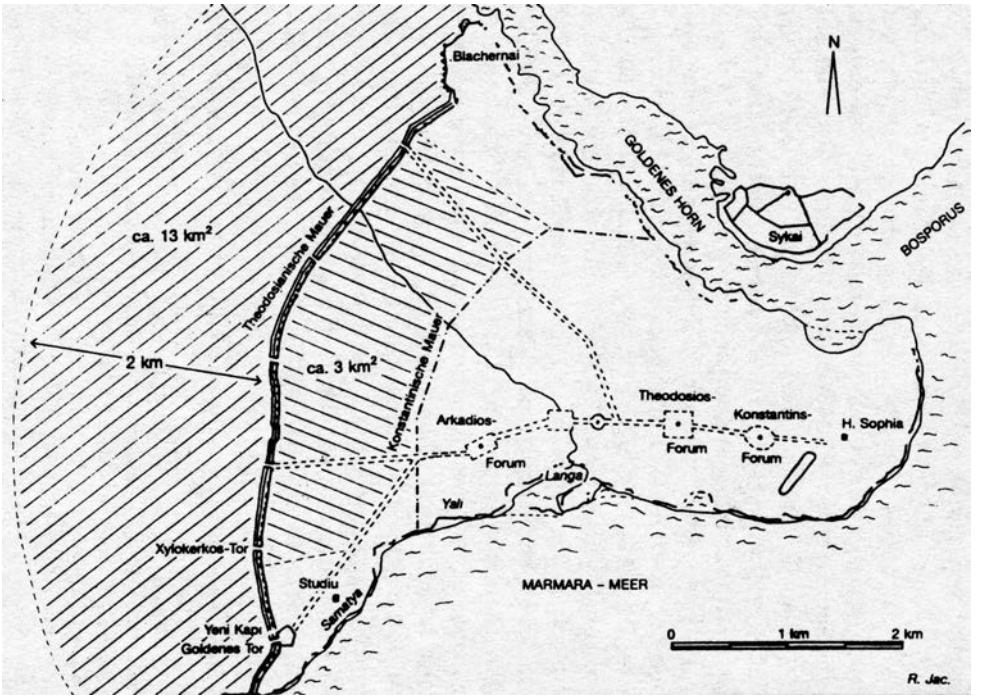
28 […] τερπνότατον πάνυ καὶ ἥσυχον, Patricia Karlin-Hayter (Hg.), Vita Euthymii Patriarchae Constantinopoli, (Bibliothèque Byzantion, Bd. 3), Brüssel 1970, 27.

29 Virginia Gingerick Berry (Hg.), De profectione Ludovici VII in orientem, New York 1948, 64. Zu Odo von Deuil vgl. Jos P. A. van der Vin, Travellers to Greece and Constantinople. Ancient Monuments and Old Traditions in Medieval Traveller's Tales, Bd. 1, Istanbul 1980, 518–519.

30 „Die dritte Seite des Dreiecks der Stadt enthält Felder… Innerhalb der Mauern liegt offenes Land, das Pflüge und Hacken gestattet; es enthält Gärten, die den Bürgern Gemüse aller Art bieten."

31 Glanville Downey (Hg.), Nikolaos Mesarites, Description of the Church of the Holy Apostles at Constantinople, in: Transactions of the American Philosophical Society, N.S. 47, Philadelphia 1957, 897–898.

Abbildung 1: Konstantinopel mit der konstantinischen und der theodosianischen Landmauer



Quelle: Johannes Koder, Gemüse in Byzanz. Die Frischgemüseversorgung Konstantinopels im Licht der Geoponika (Byzantinische Geschichtsschreiber, Ergänzungsband 3), Wien 1993, 72.

1200 Gartenbau und Landwirtschaft rings um die (durchaus nicht am Stadtrand gelegene) Apostelkirche.

Die Tradition des Gartenbaues innerhalb der Mauern Konstantinopels lässt sich über die osmanische Zeit hinweg bis in die Neuzeit verfolgen; noch in den 90er Jahren des 20. Jahrhunderts befanden sich innerhalb und außerhalb der Stadtmauern, in deren unmittelbarer Nähe, Gärtnereien, die Gemüse anbauten, konkret an der Landmauer zwischen dem Yedikule-Tor (byz. *Chryse Pyle*) und dem Belgrat-Tor (byz. *Xylokerkos*-Tor) und an der Seemauer des Marmarameeres im Bereich der Stadtviertel Samatya, Yalı und Langa, zwischen dem Ende der Konstantinischen Mauer und dem Yeni Kapı.

Einen kurzen Weg zwischen Produzent und Abnehmer gewährleistete auch das Vorland der etwa sechs Kilometer langen theodosianischen Landmauer. Hier konnten in mäßiger Distanz mindestens weitere zehn Quadratkilometer für den Gemüseanbau genutzt werden. Insgesamt gesehen, handelt es sich tatsächlich um Nahversorgung, da der Weg zu den Gemüsemärkten im Stadtzentrum Konstantinopels (somit zu den Verbrauchern und Verbraucherinnen) in der Regel sechs bis sieben Kilometer nicht überstieg, also zu Fuß in höchstens zwei Stunden zu bewältigen war,[32] auch wenn man die Strecke meist wohl in

32 Einen Hinweis auf die Erstreckung des Nahbereiches der Hauptstadt bzw. auf als zumutbar empfundene Gehdistanzen bietet die sogenannte „Osterchronik", die im Zusammenhang mit der awarischen Belagerung

Begleitung eines oder mehrerer Lasttiere (Esel oder Maultiere[33]) zurücklegte. So standen in einer Nahdistanz insgesamt wenigstens 13 Quadratkilometer für die Versorgung mit Frischgemüse zur Verfügung.[34]

Die Bedarfsbestimmung an Anbaufläche für eine Grundversorgung mit Gemüse kann auf (mitteleuropäische) Erfahrungswerte aus dem 19. Jahrhundert und dem ersten Drittel des 20. Jahrhunderts zurückgreifen,[35] die auf nichtkommerzieller Produktion beruhen und an Selbstversorger mit lediglich traditioneller, einfacher Geräteunterstützung gerichtet sind. Für die Vollversorgung einer Person bedarf es, dieser Untersuchung folgend, einer Anbaufläche von 35 bis 40 Quadratmetern, um den gesamten Jahresbedarf an Gemüse (inklusive des neuzeitlichen Massenversorgungsmittels Kartoffel) zu decken[36] (entsprechend einer Anbaufläche von etwa acht Quadratkilometern zur Bedarfsdeckung von bis zu 200.000 Personen). Dieser Flächenbedarf kann trotz der weitgehend vergleichbaren Arbeitsbedingungen nur annähernd auf spätantike oder frühmittelalterliche Verhältnisse übertragen werden, da weder das Klima und die Bodenverhältnisse übereinstimmen, noch eine genaue Identifizierung der in den Quellen genannten Gemüsepflanzen möglich ist. Auch Effizienz und Ausmaß der damaligen Möglichkeiten der natürlichen Düngung und deren langfristige Auswirkungen sind nicht bekannt. Folglich kann die Ergiebigkeit des Anbaues nicht genau abgeschätzt werden. Doch soll die Obergrenze von 40 Quadratmetern pro Person als arbeitshypothetischer Richtwert dienen, wobei diese Fläche in erster Linie für den Anbau rasch verderblichen, also frisch zu verwertenden (fallweise auch konservierungsfähigen) Gemüses angenommen sei, nicht jedoch für Hülsenfrüchte, Getreide oder Wein.

Dass der Gemüseanbau speziell im Konstantinopler Raum verschiedenartige Probleme mit sich brachte, bezeugen indirekt zwei gesetzliche Maßnahmen des Kaisers Justinian. Die erste, Novelle 64, erging im Jahr 538 und trägt den Titel „Über die Gärtner" (*Peri ton kepuron* / *De hortulanis constantinopolitanis*).[37] In ihrem Zusammenhang ist in Erinnerung zu rufen,

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Konstantinopels (626) berichtet, die Einwohner der Stadt hätten sich während einer Kampfpause hinausgewagt, um im Umkreis von bis zu etwa zehn Meilen(!) von den spärlichen Feldfrüchten zu ernten: […] ὡς ἀπὸ δέκα μιλίων θερίσαι ὀλίγα γεννήματα; Ludwig Dindorf (Hg.), Chronicon Paschale (Corpus scriptorum historiae Byzantinae), Bonn 1832, 717.

33 Maultiere waren genügsamer und ausdauernder als Pferde und belastbarer als Esel, vgl. Franz Olck, Esel, Maultier und Maulesel, in: RE 6/1 (1907), 626–676. Die Belastbarkeit von Tragtieren lag bei 6 Modioi, siehe Alexander P. Kazhdan (Hg.), The Oxford Dictionary of Byzantium, Oxford 1991, 274 s.v. „Beasts of burden". was bei Weizen etwa 77 kg entspricht, siehe Erich Schilbach, Byzantinische Metrologie (Handbuch der Altertumswissenschaft, Abt. 12; Byzantinisches Handbuch, Teil 4), München 1970, 96; nicht weit entfernt ist die Angabe von 200 römischen Pfund (ca. 65,2 kg) in Diokletians Preisedikt: Siegfried Lauffer (Hg.), Diokletians Preisedikt, Berlin 1971, 14.11.

34 Am Rande sei hier darauf hingewiesen, dass Konstantinopel keine „Ackerbürgerstadt" im Sinn des für den Stadttyp im westlichen Mittelalter verwendeten Terminus war, da die Gemüsegärtner, wie überhaupt die Landwirte, eine kleine Minderheit der Stadtbevölkerung darstellten, also für die Bevölkerungsstruktur der Stadt nicht repräsentativ waren; Kurt-Ulrich Jäschke (Hg.), Ackerbürgertum und Stadtwirtschaft, 3. Internationales Heilbronner Symposium vom 29. März bis 1. April 2001 (Quellen und Forschungen zur Geschichte der Stadt Heilbronn, Bd. 13), Heilbronn 2002, hier besonders die mit Definitionsfragen befassten Beiträge von Bärbel Brodt und Katrin Keller, sowie der Bericht über die Schlussdiskussion.

35 Ladislaus Michael Kopetz, Gemüse-Fibel. Kurzgefaßte Darstellung des Freilandgemüsebaues für Landwirte und Kleingärtner, 5. Aufl., Wien 1957 (weitgehend übereinstimmend mit der 1. Aufl. von 1935).

36 Kopetz, Gemüse-Fibel, 11.

37 Rudolf Schöll/Wilhelm Kroll (Hg.), Corpus iuris civilis, Bd. 3: Novellae, 12. Aufl., Berlin 1963, 336–338.

dass intensiver Gemüseanbau grundsätzlich nur in entsprechender Erde und bei regelmäßiger Bodenverbesserung, damals also natürlicher Düngung, möglich ist.[38]

Novelle 64 behandelt Klagen der Eigentümer von Grundstücken in Konstantinopel selbst und in dessen Umland (vor den Stadtmauern: *proasteia*, *suburbana*), wo *lachanon* (*olus*) – hier zweifellos als Sammelbegriff für Gemüse zu verstehen – angebaut wird; die Vorwürfe richten sich vor allem gegen Grundstückspächter, die der Korporation der Gärtner (*ek tu systematos ton kepuron*, *ex corpore hortulanorum*) angehören und anlässlich der Rückgabe der Grundstücke (angeblich) übertriebene oder überhaupt unberechtigte Entschädigungsforderungen für geleistete Bodenverbesserung (ἐξημέρωσις τῆς γῆς, 338.10f.), speziell der Mistdüngung (κόπρον ἐμβάλλειν τῇ γῇ, 336.26f.) stellen. Allerdings wird auch die Praxis der Landeigentümer kritisiert, nach erfolgter Düngung durch die Pächter ihre Grundstücke wegen vorgeblichen Eigenbedarfs vorzeitig zurückzufordern, was für sie angesichts des evidenten Mangels an geeignetem Dung im Großraum Konstantinopel einen zusätzlichen Gewinn bedeutete.

Die ein Jahr später, 539, publizierte Novelle 80 (*Peri tu quaesitoros* / *De quaestore*) legt unter anderem fest, dass arbeitslose, jedoch körperlich arbeitsfähige Hauptstadtbewohner zwangsweise Tätigkeiten in bestimmten Berufen zugeführt werden sollen, in denen ein Mangel an Arbeitskräften gegeben war, wobei ausdrücklich die Bereiche der öffentlichen Bauten, der Brotfabriken und des Gartenbaues angeführt werden.[39]

Schriftliche Quellen zu den angebauten Gemüsearten

Welche Gemüse angebaut wurden, lässt sich aus den erhaltenen schriftlichen Quellen nur unvollständig und annähernd erschließen.[40] Dies liegt zunächst allgemein daran, dass bei vielen griechischen Pflanzennamen der Antike und des Mittelalters bezüglich ihrer Identifizierung mit heutigen Namen Unsicherheit besteht. Angesichts des im Einzelnen ungewissen Ausmaßes genetischer Veränderungen erscheinen sowohl die fallweise Gleichheit mit modernen griechischen Namen als auch die Hinweise auf lateinische botanische Pflanzennamen in modernen Lexika[41] hilfreich, können aber auch in die Irre führen. Auch die geringe Zahl der ergiebigen Quellen erschwert diesbezügliche Aussagen.

Im Wesentlichen beschränken sich die aussagekräftigen Quellen auf: spezialisierte medizinische Texte in antiker Tradition;[42] Diätanweisungen (z.B. das lange Lehrgedicht des Michael

38 Hierzu Helga Köpstein, Gebrauchsgegenstände des Alltags in archäologischen und literarischen Quellen, in: Jahrbuch der Österreichischen Byzantinistik 31/1 (1981), 355–375, 370–371; Dieter Flach, Römische Agrargeschichte (Handbuch der Altertumswissenschaften, Bd. 3.9), München 1990, 251–252; Kaplan, Les hommes et la terre, 65–66; vgl. Kopetz, Gemüse-Fibel, 16–21.

39 […] τοῖς τοὺς κήπους ἐργαζομένοις, Novelle 80.5, Schöll/Kroll, Novellae, 390–397; weitere, etwa gleichzeitige Belege für Nutzgärten im Siedlungsbereich in den Bauvorschriften des Julian von Askalon, Catherine Saliou (Hg.), Le traité d'urbanisme de Julien d'Ascalon. Droit et architecture en Palestine au VI[e] siècle (Travaux et mémoires, Monographies, Bd. 8), Paris 1996.

40 Koder, Gemüse in Byzanz, 27–40.

41 Vor allem in Henry George Liddell/Robert Scott/Henry Stuart Jones, A Greek-English Lexicon, Oxford 1966 (LSJ).

42 Hierzu jetzt der Überblick von Maria Chrone, Η πανίδα στην διατροφή και στην ιατρική στο Βυζάντιο, Athen 2012, mit weiterer Literatur; vgl. auch Efraim Lev/Zohar Amar, Practical Materia Medica of the Medieval Eastern Mediterranean According to the Cairo Genizah, Leiden/Boston 2008.

Psellos,[43] 11. Jahrhundert); klösterliche Speiseregeln wie das für Details nicht sonderlich ergiebige, bereits erwähnte Fastengedicht des Patriarchen Nikolaos Grammatikos oder die Vorschriften in der slawischen Version der Klosterregel des Alexios Studites[44] (11. Jahrhundert); den in lateinischer Sprache abgefassten Brief des byzantinischen Gesandten Anthimos an den Frankenkönig Theuderich I. (reg. 511–533) mit umfassenden Ratschlägen zu einer medizinischen Diät, speziell mit Rezepten für die magenschonende Zubereitung von Speisen;[45] schließlich das unter dem Konventionstitel *Geoponika* bekannte Werk,[46] ein spätantiker landwirtschaftlicher Ratgeber, der im 6. Jahrhundert und erneut zur Zeit des Kaisers Konstantinos VII. Porphyrogennetos (913–959) überarbeitet wurde. Buch 12 der *Geoponika* ist in folgende Kapitel gegliedert:

> 1. Wissen darüber, was jeden Monat gesät und was gepflanzt wird, gemäß der [geografischen] Breite (*klima*) Konstantinopels – 2. Über Gärtnerei – 3. Über den für Gemüse geeigneten Boden – 4. Welcher Dung für Gemüse geeignet ist – 5. Wie man verschiedene Gemüse in wasserlosen Gegenden halten kann – 6. Damit ein Garten fruchtbar und blütenreich ist – 7. Damit die Gemüse nicht von Flöhen zerfressen und nicht von Läusen oder Vögeln geschädigt werden – 8. Damit auf Gemüsen oder Bäumen keine Raupen sind – 9. Wie man Kohlraupen vernichten kann – 10. Welche Beisaat den Gemüsen nützt – 11. Gartenangelegenheiten – 12. Über die Malve und die durch sie möglichen Heilungen verschiedener Leiden – 13. Über Lattich und die daraus mögliche Heilung und wie er weiß und wohlgeformt sein kann – 14. Dass Lattich bei sich Sellerie und Rauke und Basilikum und solche [Pflanzen] von derselben Wurzel haben kann – 15. Über Mangold und wie man ihn groß machen kann – 16. Über verschiedene Gemüse und die von ihnen kommende Heilung – 17. Über den Kohl und die aus ihm kommende Heilung – 18. Über den Spargel – 19. Über Kürbisse und Sellerie und die von ihnen kommende Heilung, und wie es möglich ist, bei beiden innen Samen zu vermeiden und sie früh reifen zu lassen – 20. Über apfelförmige Melonen – 21. Über die Rübe und ihren Samen – 22. Über Rettiche – 23. Über Sellerie – 24. Über Minze – 25. Über gezüchtete und wilde Raute – 26. Über die Rauke – 27. Über Kresse – 28. Über die Salatzichorie, also die essbare – 29. Über Porree – 30. Über Knoblauch – 31. Über Zwiebel – 32. Über Kerbel – 33. Über Polei – 34. Über

43 Lennart G. Westerink (Hg.), Michaelis Pselli poemata, Stuttgart 1992, Nr. 9: Gemüse und Früchte V. 88–189, Fleisch V. 190–207, Käse V. 208–210, Fisch und Meeresfrüchte V. 211–232, Wein V. 233–242.

44 Aleksej M. Pentkovskij (Hg.), Tipikon Patriarkha Alexija Studita v Vizantii i na Rusi, Moskau 2001.

45 Liechtenhan, Anthimi De observatione ciborum; englische Übersetzung von Mark Grant, Anthimus: On the Observance of Foods, Totnes 1996.

46 Beckh (Hg.), Geoponica; Andrew Dalby (transl.), Geoponika – Farm Work, a Modern Translation of the Roman and Byzantine Farming Handbook, Totnes 2011. – Der handschriftliche Titel lautet: Κασσιανοῦ Βάσσου σχολαστικοῦ περὶ γεωργίας ἐκλογαί, „Auswahl aus des Advokaten Kassianos Bassos' [Werk] über die Landwirtschaft". – Zu diesem Werk ausführlich: Koder, Gemüse in Byzanz; siehe auch ders., Fresh Vegetables for the Capital, in: Mango/Dagron (Hg.), Constantinople, 49–56; Paul Lemerle, Le premier humanisme byzantin. Notes et remarques sur enseignement et culture à Byzance au X^{e} siècle, Paris 1971, 288–292; Alexander P. Kazhdan, Geoponika, in: Oxford Dictionary of Byzantium, Bd. 2 (1991), 834.

Dille – 35. Über […][47] – 36. Über Zwiebeln – 37. Über die Meerzwiebel – 38. Über Sauerampfer – 39. Über Artischocken – 40. Über Portulak – 41. Die Zucht von Pilzen.

Informativ ist speziell in unserem Zusammenhang zwar lediglich Kapitel 1 des 12. Buches, doch zeigt sich, dass die meisten der folgenden Kapitel dieses Buches gewissermaßen als ins Detail gehende Erläuterungen zu den in Kapitel 1 genannten Pflanzen verstanden werden können.

Buch 12.1 der Geoponika

Laut Überschrift informiert Buch 12.1 somit über die der geografischen Breite Konstantinopels entsprechenden Möglichkeiten des Gemüseanbaus; der Text weist eine Monatsabfolge von Januar bis Dezember auf, folgt also nicht dem byzantinischen Kalender (Jahresbeginn 1. September), sondern dem römischen.[48] Buch 12.1 stellt die einzige zuverlässige Quelle zur Information über die Anbaumöglichkeiten von Gemüse im Großraum Konstantinopels dar. Es enthält folgende Pflanzennamen:[49]

Bohnenkraut (Saturei), *thrymbe* [θρύμβη], *Satureja hortensis*, 2.7: Aussaat im Februar.

Brokkoli, *krambosparagon* [κραμβοσπάραγον, „Kohlspargel"], *Brassica oleracea* var. *italica L.*, 2.13, 4.6: Aussaat im Februar; Umpflanzen März und April.

„Brumalien-Endivie", *entybon brumalitikon* [ἔντυβον βρουμαλιτικόν], *Cichorium endivia* var. *latifolium,* 9.6: Aussaat im September. → Winterendivie

Dill, *anethon* [ἄνηθον], *Anethum graveolens*, 2.15: Aussaat im Februar. – Anthimos 55: anetum.

„Doppelherzsalat", *dikardin* [δικάρδιν, wörtlich „doppelherz(ig)"] 2.9, 6.2, dikardion [δικάρδιον] 3.3, 4.3: Aussaat im Februar, März, April, Juni.

Endivie, *entybon* [ἔντυβον], *Cichorium endivia* 7.1, 7.5, 8.1, 8.7, 10.7: Aussaat im Juli, August; Umpflanzen im Juli, August, Oktober. – Anthimos 51: intuba.

Gartenkresse, *kardamon* [κάρδαμον], *Lepidium sativum*, 8.11, 10.8: Aussaat im August; Umpflanzen im Oktober.

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47 *Skimbron* bedeutet möglicherweise Bergminze oder Quendel, siehe Erich Trapp u.a. (Hg.), Lexikon zur byzantinischen Gräzität, besonders des 9.–12. Jahrhunderts, Bd. 1–2, Wien 1994–2017 (LBG), s. v. *skimbron*.

48 Allerdings findet man am Beginn des Monats Oktober den Vermerk: „Im Monat Oktober, im neuen Jahr, wird gesät …"; dieser spätere Einschub bezieht sich auf den byzantinischen Jahresbeginn im Monat September. – Zum byzantinischen Jahresbeginn: Venance Grumel, La Chronologie (Traités d'Études byzantines, 1), Paris 1958, 124–128; zur römischen und byzantinischen Jahresgliederung ebd., 175–176.

49 Abfolge: (wahrscheinlicher/möglicher) deutscher Name, griechischer Name, botanischer Name, Belegstellen in den *Geoponika* und deren Aussagen; gegebenenfalls Verweis auf Anthimos. – Ausführlichere Hinweise auf Parallelquellen und Literatur in Koder, Gemüse in Byzanz, 41–63, wobei hier in einigen Fällen Änderungen vorgenommen wurden. – Die Angaben wurden anhand der entsprechenden Lemmata in den Lexika LSJ, LBG und Geoffrey W. H. Lampe, A Patristic Greek Lexicon. Oxford 1961 überprüft, doch sind aus den bereits weiter oben genannten Gründen viele Identifizierungen mit den deutschen und den lateinischen botanischen Namen unsicher.

Gartenmelde, *chrysolachanon* [χρυσολάχανον, wörtlich „Goldgemüse"], *Atriplex hortensis L.*, 1.2, 3.2, 4.2, 5.2: Aussaat im Jänner, März, April, Mai. – Anthimos 59: atriplex.

Karotte (Möhre, Mohrrübe, Gelbe Rübe), *daukin* [δαυκίν], *Daucus carota subsp. sativus*, 2.5: Aussaat im Februar.

Kohlrabi, *gongylin kephaloton* [γογγύλιν κεφαλωτόν, „Kopfrübe"], *Brassica oleracea* var. *gongylodes L.*, 8.3, 9.4: Aussaat im August; Umpflanzen im September.

komodianon [κωμωδιανόν], wahrscheinlich eine Salatsorte, 2.21, 12.4: Aussaat im Dezember; Umpflanzen im Februar.

komodianon polyklonon [κωμωδιανόν πολύκλωνον, „reich verzweigtes Komodianon"], wahrscheinlich eine Salatsorte, 10.3: Aussaat im Oktober.

Koriander, *koliandron* [κολίανδρον], *Coriandrum sativum*, 2.14, 9.8, 11.6: Aussaat im Februar, November; Umpflanzen im September. – Anthimos 54, 55, 67: coriandrum, coriandri radix (Korianderwurzel).

Lattich, *thridakin* [θριδάκιν], *Lactuca sativa*, 2.19, 10.4, 12.3: Aussaat im Oktober, Dezember; Umpflanzen im Februar. – Anthimos 51: lactuca.

Lauch, *prason* [πράσον], *Allium ampeloprasum*, 2.2, 6.3, 7.3, 8.6: Aussaat im Februar, Juli; Umpflanzen im Juni, August. – Anthimos 50, 55: porrus.

Malve, *molochin* [μολόχιν], *Malva sylvestris L.*, 6.5, 7.8, 11.5: Aussaat im Juni; Umpflanzen im Juli, November. – Anthimos 50: malva.

Mangold, *seutlon* [σεῦτλον], *Beta vulgaris* subsp. *vulgaris L.*, 2.4, 3.1, 6.4, 7.7, 10.6, 11.4: Aussaat im Februar, März, Juni; Umpflanzen im Juni, Juli, Oktober, November.

Mangoldrübe, *seutlomolochon* [σευτλομόλοχον, „Mangoldmalve"], *Beta vulgaris* subsp. *vulgaris L.*, 4.1, 5.1, 5.4, 6.1, 7.2, 7.6, 8.2, 8.8, 9.1, 9.7: Aussaat im April, Mai, Juni, Juli, August, September; Umpflanzen im Mai, Juli, August, September. – Anthimos 50: beta.

Meeresmangold, *thalassokrambe* [θαλασσοκράμβη], *Beta vulgaris* subsp. *maritima L.*, 1.1, 4.7: Aussaat im Jänner; Umpflanzen im März und April.

Minze, *hedyosmon* [ἡδύοσμον], *Mentha sp.*, 5.3: Aussaat im Mai. – Anthimos 54: menta.

Pastinak, *teutlorrizon* [τευτλόρριζον, „Rübenwurzel"], *Pastinaca sativa*, 2.6: Aussaat im Februar. – Anthimos 53: pastanaca.

Petersilie, *kodimenton* [κοδιμέντον], *Petroselinum crispum*, 2.1: Aussaat im Februar.

Phrygischer Kohl, *phrygiatikon* [φρυγιατικόν] 2.10, 2.20, 3.8: Aussaat im Februar; Umpflanzen in den Monaten Februar und März.

Rauke, *euzomon* [εὔζωμον], *Eruca sativa*, 8.10, 10.9: Aussaat im August; Umpflanzen im Oktober.

Raute, *peganon* [πήγανον], *Ruta graveolens subsp. hortensi*, 2.16: Aussaat im Februar.

Rettich (Ackerrettich), *raphanon* [ῥάφανον, auch raphanos, ῥάφανος], *Raphanus raphanistrum*, 8.9, 9.9: eine Salatsorte, Aussaat im August; Umpflanzen im September. – Anthimos 60: radix.

rigitanon [ῥιγιτανόν], 2.11, 3.5, 4.4, 4.9, 5.3: Aussaat im Februar, März, April, Mai; Umpflanzen im März und April.

Rübe, frühe, *gongylin proimon eis gongylosparagon* [γογγύλιν πρώιμον εἰς γογγυλοσπάραγον, „frühe, als Rübenspargel dienende Rübe"] 8.4, 9.5: Aussaat im August; Umpflanzen im September. – Anthimos 60: napus.

Salat, *marullin* [μαρούλλιν], *Lactuca sativa*, 2.17, 5.5, 10.1, 12.1: Aussaat im Februar, März, Oktober, Dezember; Umpflanzen im Februar, März und April, Juni, Juli.

Salate, verschiedene, *marullia diaphora* [μαρούλλια διάφορα], 2.8: Aussaat im Februar. → „Doppelherzsalat", Kohl (phrygischer), *rigitanon*.

Weisskohl, *krambe leuke* [κράμβη λευκή], auch leukokrambe [λευκοκράμβη] u. ä., *Brassica oleracea* convar. *capitata* var. *alba L.*, 2.12, 4.5, 8.5, 10.10: Aussaat im Februar, August; Umpflanzen im März und April, Oktober. – Anthimos 50: caulis?

„Wildrübe", *gongylin tes agrias* [γογγύλιν τῆς ἀγρίας], 9.3, 11.2: Aussaat im September; Umpflanzen im November.

Winterendivie, *entybon opsimon* [ἔντυβον ὄψιμον, „späte Endivie"], 9.2, 11.3: Aussaat im September; Umpflanzen im November.

Zichorie, *pikridin* [πικρίδιν], *Cichorium intybus*, 2.18, 3.7, 10.2, 12.2: Aussaat im Oktober, Dezember; Umpflanzen im Februar, März.

Zwiebel, *kromydin* [κρομύδιν], *Allium cepa*, 2.3: Aussaat im Februar. – Anthimos 62: cepa.

Weitere Gemüsearten im Brief des Anthimos

In den brieflichen Ratschlägen des Anthimos findet man Gemüsearten,[50] die nicht in *Geoponika* 12.1 genannt werden. Dabei handelt es sich zunächst um solche, die Anthimos aufgrund seiner Kenntnis der regionalen Gegebenheiten im Merowingerreich und der Ernährungsgewohnheiten Theuderichs kannte. Hinzu kommen Sorten, die erstens im damaligen Konstantinopler Klima nicht gediehen, wie Melanzani,[51] Artischocken[52] oder Flaschenkürbisse, oder die zweitens aufgrund ihrer Haltbarkeit leicht über lange Strecken transportfähig waren (etwa getrocknete Hülsenfrüchte, Oliven), also nicht in unmittelbarer Nähe erzeugt werden mussten. Indirekt bestätigen die Informationen des Anthimos also die Konstantinopel-spezifische Aussage im Titel von 12.1 der *Geoponika*. Die folgenden Angaben finden sich nur im Brief des Anthimos:[53]

Fenchel, *finiculi radex*, *Foeniculum vulgare*, Anthimos 54
Flaschenkürbis, *cocurbita*, *Lagenaria vulgaris (ssp. siceraria) L.*, Anthimos 56
Gurke, *cucumis*, *Cucumis sativus*, Anthimos 57
Hirse (echte Hirse, Rispenhirse), *milium*, *Panicum miliaceum*, Anthimos 71
Hirse (Kolbenhirse), *panicium*, *Setaria italica*, Anthimos 71

50 Eine kommentierte Liste in Koder, Gemüse in Byzanz, 35–38: 3.1. Der Brief des Anthimos.

51 *Matzitzanin*: Eideneier, Ptochoprodromos, 2, V. 41, *melitzana*: Helma Winterwerb (Hg.), Porikologos, Köln 1992, V. 33 und 108–109; in Persien und dem Nahen Osten bereits seit der Spätantike nachweisbar: Andrew M. Watson, Agricultural Innovation in the Early Islamic World. The Diffusion of Crops and Farming Techniques, 700–1100, Cambridge 1983, 70–71.

52 *Anginara*: Winterwerb (Hg.), Porikologos V. 108–109; Watson, Agricultural Innovation, 64–65: „before 1500".

53 Koder, Gemüse in Byzanz, 64–66.

Kichererbse (weisse und schwarze), *cicer (album et nigrum), Cicer arietinum*, Anthimos 66, 73
Knoblauch, *alium*, *Allium sativum*, Anthimos 61
Kuhbohne, *fasiolum*, *Vigna unguiculata*, Anthimos 69
Linse, *lenticula*, *Lens esculenta*, Anthimos 67
Lupine (Feigbohne), *lupinus*, *Lupinus albus*, Anthimos 72
Melone (Zuckermelone), *melo*, *Cucumis melo*, Anthimos 58
Pastinak, *pastanaca*, *Pastinaca sativa*, Anthimos 53
Polei, *puleium*, *Mentha pulegium*, Anthimos 58
Reis, *oriza*, *Oryza sativa*, Anthimos 70
Saubohne, *fava*, *Vicia faba*, Anthimos 65
Schalotte, *ascalonia*, *Allium ascalonicum*, Anthimos 63
Spargel, *asparagus*, *Asparagus officinalis*, Anthimos 54
Sumach, *rusiriacus* („syrischer Rus"), *Rhus coriaria*, Anthimos 67

Die ganzjährige Versorgung Konstantinopels mit Gemüse

In den meisten Regionen des Byzantinischen Reiches, so auch in Konstantinopel, war die ganzjährige Versorgung mit frischem Gemüse nicht möglich, wobei fast überall die Wintermonate betroffen waren.[54] Dies bestätigen für Konstantinopel indirekt auch die Angaben zu Aussaat und Verpflanzung in Buch 12.1 der *Geoponika*, wo dies besonders für die Monate Dezember bis März zutrifft. Für diesen Zeitraum wurden haltbare Gemüsearten spät geerntet und eingelagert, vor allem Weißkraut, Kohl, Steckrüben,[55] Mangoldrüben und Zwiebeln. Die Einlagerung erfolgte teils ohne besondere vorbereitende Maßnahmen in trockenen Kellern oder sonstigen dunklen und kühlen Lagerräumen. Andere Gemüse, besonders Rüben, Kohl und Krautsorten[56] wurden, wie auch die Oliven, durch Einlegen in Salzlake (*halme*, von griech. *hals*, „Salz") oder Essigsalzlake (*oxalme*) haltbar gemacht[57] und in dieser Form angeliefert und aufbewahrt.

Der allgemeine Name für die in Salzlake konservierten Gemüse war *halmaia* („Eingesalzenes"); bis heute sind diese Gemüsekonserven unter dem arabischen Namen *turšīa* (hiervon abgeleitet türkisch *turşu*, griechisch *tursi*) im östlichen Mittelmeerraum verbreitet. Der Arzt Paulos von Aigina (7. Jahrhundert) betont den Wert von konservierten Gemüsen, besonders

54 In Ägypten der Sommer, vgl. die Pachomios-Regel: Armand Veilleux (Hg.), Pachomian Koinonia, Bd. 2: Pachomian Chronicles and Rules (Cistercian Studies, Bd. 46), Kalamazoo, MI 1981, 141–195, § 80; ein Hinweis auf die Verderblichkeit der Salzlake in der Horsiesios-Regel, ebd. 197–223, § 22.

55 Dementsprechend erwähnt ein anonymes Zwölfmonatsgedicht den Kohl (*krambe*) im Dezember und die Rüben (*seutla*) im Februar, Roberto Romano (Hg.), Nicola Callicle, Carmi (Byzantina Neo-Hellenica Neapolitana 8), Neapel 1980, 128.

56 […] παρὰ ταῖς καπηλίσι προβεβλημένην ἐνόδιον ἐδωδήν, ἣν ἡ κοινὴ διάλεκτος ἁλμαίαν ὠνόμασεν, Jan-Louis van Dieten (Hg.), Nicetae Choniatae Historia (Corpus Fontium Histzoriae Byzantinae, Bd. 11), Berlin 1975, 57 l. 5; τὰ τῆς ἁλμαίας φύλλα […], Nicola Festa (Hg.), Theodori Ducae Lascaris Epistulae CCXVII (Pubblicazioni del R. Istituto di studi superiori pratici e di perfezionamento in Firenze. Sezione di filosofia e lettere, Bd. 29), Florenz 1898, Brief 54.

57 Moderne Rezepte bei Marianna Yerasimos, 500 Years of Ottoman Cuisine, Istanbul 2005, 217; zur Zubereitung der Laken vgl. Flach, Römische Agrargeschichte, 272–273.

von solchen, welche „eßbare Wurzeln“ haben, und betont, dass „sowohl die in Salzlake als auch die in Essigsalzlake zwecks Einlagerung konservierten (Gemüse) im Magen gut verträglich und auch gut verdaulich“[58] seien. – Neben der allgemeinen Bedeutung bezeichnete *halmaia* auch regional unterschiedliche Suppen oder Breie aus Kohl und anderen Blattgemüsen, vermischt mit Öl und Gewürzen.

Zusammenfassend stellt man fest, dass sich die Bewohner und Bewohnerinnen von Konstantinopel in Friedenszeiten und unter regulären Erntebedingungen auf eine gute Versorgung mit frischem Gemüse und allgemein mit Lebensmitteln verlassen konnten. Zu Recht fragt daher der Erzbischof von Athen, Michael Choniates (Ende des 12. Jahrhunderts) seinen Konstantinopler Freund Demetrios Drimes in einem Brief, der vor allem auf die Versorgung mit Nahrungsmitteln Bezug nimmt:

> „Was fehlt euch denn? Werden nicht die weizentragenden Ebenen von Makedonien und Thrakien für euch bebaut? Wird nicht der Wein von Euböa und Pteleon und Chios und Rodos für euch gekeltert? […] Fließen nicht Waren aller Art, Strömen gleich, in der Kaiserstadt zusammen wie in ein Meer?“[59]

Aus der Sicht einer von Steuereintreibern geplagten Kleinstadt in der Provinz hatte er gewiss recht.

Übersetzung und Text von *Geoponika* 12.1

Die folgende deutsche Übersetzung beruht auf der Ausgabe der *Geoponica* von Heinrich Beckh;[60] sie wurde aufgrund der Vorlage von Koder[61] überarbeitet und mit der englischen Übersetzung von Dalby[62] abgeglichen. Der griechische Text (in der Fußnote) gibt ebenso – mit geringfügigen, meist syntaktischen Änderungen – die Beckh'sche Ausgabe der *Geoponica* wieder.

Buch 12, Kapitel 1. Wissen darüber, was jeden Monat gesät und was gepflanzt wird, gemäß der [geografischen] Breite Konstantinopels

1. Im Monat Jänner wird gesät: Meeresmangold sowie Gartenmelde und Bockshornklee.

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58 Johan Ludvig Heiberg (Hg.), Paulus Aegineta, Hypomnema, Bd. 1–2 (Corpus medicorum graecorum 9.1–2), Leipzig/Berlin 1921–1924, 1.76: […] τὰ δὲ εἰς ἀπόθεσιν ταριχευόμενα δι᾽ ἅλμης τε καὶ ὀξάλμης εὐστόμαχά τέ ἐστι καὶ εὐόρεκτα […].

59 Τίνος γὰρ καὶ σπανίζετε; Οὐ Μακεδονίας καὶ Θρᾴκης καὶ Θετταλίας πυροφόροι πεδιάδες ὑμῖν γεωργοῦνται, οὐχ ὑμῖν ληνοβατεῖται οἶνος ὁ Εὐβοεὺς καὶ Πτελεατικὸς καὶ Χῖος καὶ ῾Ρόδιος, […] οὐ χρημάτων πάντες ὁμοῦ ποταμοὶ ὡς ἐς μίαν θάλασσαν τὴν βασιλίδα πόλιν συρρέουσιν; Michael Choniates, Brief an den Protasekretis Demetrios Drimes, in: Photeine Kolovou (Hg.), Μιχαὴλ Χωνιάτης, Athen 1999, Brief 50.

60 Beckh (Hg.), Geoponica.

61 Koder, Gemüse in Byzanz, 31–33.

62 Dalby, Geoponika – Farm Work, 246–247.

2. Im Monat Februar wird gesät: Petersilie mit Porree und Zwiebel, Mangold, Karotten, Rübenwurzel, Bohnenkraut, verschiedene Salate, nämlich Doppelherzsalat, phrygischer Kohl, *rigitanon*, sowie Weißkohl und Brokkoli, Koriander, Dill und Raute. – Verpflanzt wird: Salat, Zichorie, Lattich, reich verzweigter phrygischer Kohl, *komodianon*.

3. Im Monat März wird gesät: heimischer Mangold, Gartenmelde, Doppelherzsalat, Salat, *rigitanon*. – Verpflanzt wird: Salat, Zichorie, reich verzweigter phrygischer Kohl.

4. Im Monat April wird gegen Ende [des Monats] gesät: Mangoldrübe, Gartenmelde und Doppelherzsalat mit *rigitanon*. – Verpflanzt wird ab März und April: Weißkohl, desgleichen Brokkoli, Meeresmangold und Salat, [dieser] mit *rigitanon* und separat.

5. Im Monat Mai wird gesät: Mangoldrübe und Gartenmelde, desgleichen auch Minze und *rigitanon*. – Verpflanzt wird aber: Mangoldrübe und Salat.

6. Im Monat Juni wird gesät: Mangoldrübe, desgleichen auch Doppelherzsalat; und der Porreeschößling wird, mit Erde umhüllt, an einen feuchten Platz verpflanzt; ebenso auch Mangold, Malve und Salat.

7. Im Monat Juli wird gesät: Endivie und Mangoldrübe, und man pflanzt Porree in trockenen Boden und gießt ihn sofort, damit der Steckling nicht einzieht; er neigt nämlich dazu, zu verdorren. – Und Salat muss man verpflanzen, sowie Endivie und Mangoldrübe. Man soll jedoch separat Mangold und separat Malve verpflanzen.

8. Im Monat August wird gesät: Endivie, Mangoldrübe, Kohlrabi, frühe Rübe für Mangoldspargel und Weißkohl. – Und verpflanzt wird: Porree, Endivie und Mangoldrübe; und man sät Rettich breitflächig [?]; auch Rauke und Gartenkresse wird gesät.

9. Im Monat September wird gesät: Mangoldrübe, späte Endivie (Winterendivie) und „Wildrübe". – Verpflanzt wird aber: Kohlrabi und die für Mangoldspargel dienende Rübe, die Brumalien-Endivie und die Mangoldrübe gemeinsam, weiters Koriander und Rettich.

10. Im Monat Oktober, im neuen Jahr, wird gesät: Salat, Zichorie, reich verzweigtes *komodianon*, Lattich. – Verpflanzt wird aber: Rübe, Mangold, Endivie, Gartenkresse, Rauke und Kohl, nämlich der Weißkohl.

11. Im Monat November wird gesät: Bockshornklee. – Und verpflanzt wird: „Wildrüben", späte Endivie (Winterendivie), und getrennt Mangold und getrennt Malve; und gesät wird Koriander.

12. Im Monat Dezember wird gesät: Salat und reich verzweigte Zichorie, Lattich und *komodianon*.[63]

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63 Βιβλίον ιβ', κεφάλαιον α'. Γνῶσις τὸ κατὰ μῆνα τί σπείρεται καὶ τί φυτεύεται, κατὰ τὸ κλίμα Κωνσταντινουπόλεως.
1. Μηνὶ Ἰαννουαρίῳ σπείρεται θαλασσοκράμβη μετὰ χρυσολαχάνου, καὶ τίλεως.

Anhang: Die Mangelware Brennholz

Der vorliegende Beitrag beschränkt sich auf Aspekte der Lebensmittelversorgung Konstantinopels. Daher sei nur kurz auf ein Dauerproblem der dicht besiedelten Regionen des Byzantinischen Reiches hingewiesen, das die Hauptstadt von Anfang an (und bis weit in die Neuzeit) in besonderer Weise betraf, nämlich die ausreichende Versorgung mit Holz und Holzkohle als Brennmaterial. Die bereits weit in die vorbyzantinische Zeit zurückreichende Reduzierung der Bewaldung im gesamten Gebiet des Römischen Reiches ergab sich aus den folgenden zwei Faktoren: Zum einen beutete der Ackerbau mangels geeigneter Fruchtfolgemethoden und Düngemöglichkeiten bis in das 6. Jahrhundert die Böden rasch aus, was extensive Rodungen von neuem Ackerland erforderlich machte. Zum anderen wurde stetig Holz jeder Qualität dem noch verfügbaren Waldland entnommen.[64] Dem stand die geringe Regenerationsfähigkeit von Wald- und Buschland unter den klimatischen Bedingungen des Mittelmeerraumes gegenüber. Holz war also eine teure Mangelware. In die Großstadt Konstantinopel musste das für den Hausbau, den Schiffsbau, den Maschinenbau und diverse Handwerke benötigte hochwertige Holz, aber auch Brennholz und Holzkohle aus dem thrakischen Hinterland und

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2. Μηνὶ Φεβρουαρίῳ σπείρεται κοδιμέντον μετὰ πράσου καὶ κρομύδιν, σεῦτλον, δαυκίν, τευτλόῤῥιζον, θρύμβη, μαρούλλια διάφορα, τουτέστι δικάρδιν, φρυγιατικόν, ῥιγιτανὸν καὶ κράμβη λευκὴ καὶ κραμβοσπάραγον καὶ κολίανδρον καὶ ἄνηθον καὶ πήγανον. – μεταφυτεύεται δὲ μαρούλλιν, πικρίδιν, θριδάκιν, φρυγιατικὸν πολύκλωνον, κωμωδιανόν.

3. Μηνὶ Μαρτίῳ σπείρεται σεῦτλον ἐνθάδιον καὶ χρυσολάχανον καὶ δικάρδιον, μαρούλλιν, ῥιγιτανόν. – μεταφυτεύεται δὲ μαρούλλιν, πικρίδιν, φρυγιατικὸν πολύκλωνον.

4. Μηνὶ Ἀπριλλίῳ σπείρεται εἰς τὸ λῆγος σευτλομόλοχον καὶ χρυσολάχανον καὶ δικάρδιον μετὰ τοῦ ῥιγιτανοῦ. – μεταφυτεύεται δὲ ἀπὸ τοῦ Μαρτίου καὶ τοῦ Ἀπριλλίου μηνὸς λευκοκράμβη, ὁμοίως καὶ κραμβοσπάραγον καὶ θαλασσοκράμβη καὶ τὸ μαρούλλιν, σὺν τῷ ῥιγιτανῷ καὶ μόνον.

5. Μηνὶ Μαΐῳ σπείρεται σευτλομόλοχον καὶ χρυσολάχανον, ὁμοίως καὶ ἡδύοσμον καὶ ῥιγιτανόν. – μεταφυτεύεται δὲ σευτλομόλοχον καὶ μαρούλλιν.

6. Μηνὶ Ἰουνίῳ σπείρεται σευτλομόλοχον, ὁμοίως δὲ καὶ δικάρδιν· καὶ τὸ λεπτὸν τοῦ πράσου μεταφυτευόμενον παραπηλωτὸν εἰς ἔνυγρον τόπον· ὁμοίως καὶ τὸ σεῦτλον, καὶ τὸ μολόχιν καὶ μαρούλλιν.

7. Μηνὶ Ἰουλίῳ σπείρεται ἔντυβον, καὶ σευτλομόλοχον, καὶ καταφυτεύειν πράσον κατὰ ξηρᾶς γῆς, καὶ παραχρῆμα ποτίζειν αὐτό, ἵνα μὴ ποιήσῃ κέντρον τὸ ῥιζάριν· μέλλει <γὰρ> τήκεσθαι. καὶ μαρούλλιν ἀναγκαστὸν μεταφυτεύειν, καὶ ἔντυβον, καὶ σευτλομόλοχον. τὸ δὲ σεῦτλον ἰδίως καὶ τὸ μολόχιν ἰδίως μεταφυτεύειν.

8. Μηνὶ Αὐγούστῳ σπείρεται ἔντυβον καὶ σευτλομόλοχον καὶ γογγύλιν κεφαλωτόν καὶ γογγύλιν πρώιμον εἰς γογγυλοσπάραγον καὶ κραμβὶν λευκόν. – καὶ μεταφυτεύεται πράσον, ἔντυβον, σευτλομόλοχον· καὶ ῥάφανον σπείρεται κατὰ πλάτος· καὶ τὸ εὔζωμον καὶ τὸ κάρδαμον σπείρεται.

9. Μηνὶ Σεπτεμβρίῳ σπείρεται σευτλομόλοχον καὶ ἔντυβον ὄψιμον καὶ γογγύλιν τὸ τῆς ἀγρίας. – μεταφυτεύεται δὲ τὸ γογγύλιν τὸ κεφαλωτὸν καὶ τὸ γογγύλιν τὸ χρηματίζον εἰς γογγυλοσπάραγον, καὶ τὸ ἔντυβον τὸ βρουμαλιτικὸν καὶ τὸ σευτλομόλοχον ὁμοῦ, καὶ τὸ κολίανδρον, καὶ ὁ ῥάφανος.

10. Μηνὶ Ὀκτωβρίῳ εἰς τὸ νέον ἔτος σπείρεται μαρούλλιν, πικρίδιν, κωμωδιανὸν πολύκλωνον, θριδάκιν. – μεταφυτεύεται δὲ τὸ γογγύλιν, σεῦτλον καὶ ἔντυβον καὶ κάρδαμον καὶ εὔζωμον καὶ κράμβιν τὸ λευκοκράμβιν.

11. Μηνὶ Νοεμβρίῳ σπείρεται τίλις. – καὶ μεταφυτεύεται γόγγυλα τῆς ἀγρίας καὶ ἔντυβον ὄψιμον, καὶ σεῦτλον ἰδίως καὶ μολόχιν ἰδίως· καὶ σπείρεται κολίανδρον.

12. Μηνὶ Δεκεμβρίῳ σπείρεται μαρούλλιν καὶ πικρίδιν πολύκλωνον, θριδάκιν, κωμωδιανόν.

64 Cécile Morrisson, Trading in Wood in Byzantium. Exchange and Regulations, in: Paul Magdalino/Nevra Necipoğlou/Ivana Jeftić (Hg.), Trade in Byzantium. Papers from the 3rd International Sevgi Gönül Byzantine Studies Symposium, Istanbul 2016, 105–127; Archibald Dunn, The Exploitation and Control of Woodland and Scrubland in the Byzantine World, in: Byzantine and Modern Greek Studies 16 (1992), 235–298; siehe auch Peregrine Horden/Nicholas Purcell, The Corrupting Sea, a Study of Mediterranean History, Oxford 2000, 328–338.

(zum größeren Teil) zu Schiff aus Kleinasien und von den Schwarzmeerküsten herangeführt werden.[65]

In ländlichen Gebieten konnte der Mangel an Brennholz durch Fladen oder Ziegel aus gepresstem und getrocknetem, mit Spreu und anderen Rückständen aus der Getreideverarbeitung vermischtem Dung von Rindern (oder Kamelen) ersetzt werden,[66] ein Brennmaterial, das bis heute in zahlreichen Regionen Asiens und Afrika verbreitet ist. In Konstantinopel aber war es mangels entsprechenden Viehbestandes kaum verfügbar.

Um wertvolles Holz für Bau und Handwerk der Verwendung als Brennholz zu entziehen, war es gesetzlich geschützt. Die diesbezüglichen Verbote wurden schon in der Spätantike erlassen und fanden in der Rechtskodifizierung des Kaisers Justinian ihren Niederschlag, von wo sie Ende des 9. Jahrhunderts in deren griechische Übersetzung, die *Basiliken* („Kaiserrecht"), übernommen wurden; charakteristisch:

> „Die Pfähle und die Spieße gehören zum Werkholz, nicht zum Brennholz […]. Brennholz sind aber die Zapfen, aus denen die Frucht herausgeschüttelt wurde, der Abfall vom Behauen (der Stämme), die Kohle (Holzkohle), das Reisig (Astwerk), die Nussschalen und ähnliches".[67]

Noch in frühosmanischer Zeit berichtet der Königsberger Apotheker Reinhold Lubenau, der 1587 bis 1589 an der österreichischen Gesandtschaft in Konstantinopel lebte, Brennholz sei dort damals so teuer gewesen, dass viele Haushalte das ganze Jahr über weder geheizt noch gekocht hätten, sondern es vorzogen, ihr warmes Essen aus Garküchen zu beziehen.[68]

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65 Ein besonderer Fall waren die Waräger (*Rusioi*), die auf ihren im Winter geschlägerten und angefertigten Einbäumen (*monoxyla*), die sie mit den Produkten ihrer Untertanen (Pelze, Honig, Wachs) beluden, über den Dnjepr und das Schwarze Meer nach Konstantinopel kamen, um dort ihre Waren und Einbäume im Tauschhandel anzubieten; vgl. die anschauliche Beschreibung von Konstantinos Porphyrogennetos: Gyula Moravcsik/Romilly J. H. Jenkins (Hg.), Constantine Porphyrogenitus, De Administrando Imperio (Corpus Fontium Historiae Byzantinae 1), 2. Aufl., Washington D.C. 1985, c. 9, und Klaus Belke/Peter Soustal (Übers.), Die Byzantiner und ihre Nachbarn. Die De Administrando Imperio genannte Lehrschrift des Kaisers Konstantinos Porphyrogennetos (Byzantinische Geschichtsschreiber 19), Wien 1995, 78–86, jeweils mit ausführlichem Kommentar.

66 Diesen Brennstoff bezeugt Leon von Synada, siehe Martha Pollard Vinson (Hg.), The Correspondence of Leo, Metropolitan of Synada and Syncellus (Corpus Fontium Historiae Byzantinae 23), Washington D.C. 1985, Brief 43, Z. 68–69: ἀντὶ ξύλου τῷ ζαρζάκῳ χρώμεθα, ὅπερ ἐστὶν ἐπιμελείας ἀξιωθεῖσα κόπρος, πρᾶγμα καὶ ἀτιμότατον καὶ δυσωδέστατον, „Anstelle von Holz verwenden wir *zarzakon*, das ist verarbeiteter Dung, eine höchst ehrlose und übelriechende Sache". (Wirklich „übelriechend" ist *zarzakon* übrigens in getrockneter Form nicht.) – Archäologisch belegt ist dieses Heizmaterial z.B. in den Resten einer im 3. Jahrhundert durch Erdbeben zerstörten Küche in Ephesos; Ursula Thanheiser, Pflanzenreste, in: Friedrich Krinzinger (Hg.), Die Wohneinheiten 1 und 2 im Hanghaus 2 von Ephesos (Forschungen in Ephesos 8/8), Wien 2010, 685–687.

67 Herman J. Scheltema/Nicolaas van der Wal (Hg.), Basilicorum libri LX. Series A, I, Groningen 1955, Buch 2.2.162 (Digesten, Buch 50.16.168). – Praxisorientiert befahl das etwa gleichzeitige Eparchenbuch (18.3) den Bäckern und allgemein den Stadtbewohnern und -bewohnerinnen, sie mögen „ihren Vorrat an Heu, Reisig und Schilf an freien Orten oder an solchen, die mit Mörtelmauern umgeben sind, aufbewahren, damit nicht infolge dessen leichter Entzündbarkeit Feuersbrünste in der Stadt entstehen".

68 Wilhelm Sahm (Hg.), Beschreibung der Reisen des Reinhold Lubenau, Bd. 1–2, Königsberg 1912–1930, Bd. 2, 111–112. – Lubenaus Erklärung war übrigens, dass der Import von Brennholz in die Hauptstadt ein Monopol des Sultans war, der daran gut verdiente.

Carine Pachoud / Markus Schermer

Reconciling Tradition and Innovation in Traditional Mountain Cheese Value Chains: The Role of Social Capital

The Case of the Artisanal Serrano Cheese Value Chain in Southern Brazil

Abstract: Globalised and production-oriented agriculture often leads to the exclusion of rural mountain areas and to the marginalisation of their traditional food value chains, of which cheese is particularly interesting. Important elements for such value chains are the valorisation of the product quality and of traditional know-how. Territorial innovations, defined as a response to a problem identified collectively in a territory, allow adaptation to changes. Reconciling tradition with territorial innovation is central for the resilience of the value chain and social capital is the resource that needs to be mobilised to cooperate and innovate. In this contribution, we analyse the history of the artisanal Serrano cheese in southern Brazil. The aim of this article is to analyse strategies for building a resilient artisanal Serrano cheese value chain by studying the role of social capital in the balance between maintaining traditions and the emergence of territorial innovations. In the results, first, we observe that the peasant families are central actors in maintaining tradition by passing on know-how to the next generations through bonding social capital. Second, the agricultural advisory services (EMATER-RS and EPAGRI-SC) are the central actors in the innovation processes by diffusing technical innovations, but also for the emergence of organisational innovations through the creation of producers' associations. The associations allow connecting the different actors of the value chain through linking and bridging social capital, necessary for territorial innovation to emerge.

Key Words: tradition, territorial innovation, social capital, mountain cheese value chains

Introduction

Globalised and production-oriented agriculture often leads to spatial inequalities and exclusion of peripheral rural regions; often, rural mountain areas experience a delay in their development compared to more advantaged agricultural areas.[1] Consequently, the dominant

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agro-food system contributes to the marginalisation of traditional food value chains, like those of artisanal cheeses, often located in rural mountain areas. Indeed, livestock grazing is a common activity for most mountain communities because it makes use of non-arable areas. This activity has multiple economic, social, and environmental functions, often linked to other rural, but also urban, activities.[2] Moreover, livestock farming has a central place in maintaining the socio-cultural traits of these territories, in preserving traditions.[3] In addition, cheese represents an essential source of food and income for various mountain populations. At the same time, the quality and distinctiveness of the cheese, most of the time made from raw milk, confer an added value on milk and often become a cultural object.[4] In fact, the cheese value chains are firmly anchored in various dimensions of history, identity, and culture, as well as being community-based and collectively organised activities.[5]

Such traditional value chains are linked to the concept of territory,[6] defined as "a developed area, socially constructed, culturally labelled and institutionally regulated".[7] Indeed, these value chains are considered territorialised systems, meaning that they are localised in a defined space and represent a group of actors with a specific identity. The term "actor" denotes any individual who intentionally participates in activities with territorial implications and who is capable of reflexivity.[8] The valorisation of product quality and of traditional know-how, as well as control over technical innovations, are important elements in these value chains. Major elements of governance include horizontal coordination between local actors, which implies the cooperation of the actors operating in this territory.[9]

In the context of globalisation, it is necessary to pay special attention to marginalised territories such as rural mountain areas and to turn them into dynamic spaces in order to increase the well-being of local populations[10] and thus avoid depopulation. Indeed, rural mountain areas are usually difficult to access and far away from political decision-making, with infrastructures that are poorly developed. These areas can hardly compete with urban and more developed rural regions concerning generic resources (e.g. labour, wages, and infrastructures).[11] Nonetheless, globalisation at the same time provides new paths forward for these territories through endogenous development based on local resources, local cul-

1 André Torre/Dominique Vollet, Aux fondements du développement territorial, in: André Torre/Dominique Vollet (eds.), Partenariats pour le développement territorial, Versailles 2016, 11–32.
2 Laurent Dobremez/Dominique Borg, L'agriculture en montagne – Évolutions 1988–2010 d'après les recensements agricoles (Agreste Les Dossiers 26/July 2015), Grenoble 2015.
3 Martin Price, Mountains: A very short introduction, Oxford 2015, 83–84.
4 Claire Delfosse, La localisation de la production fromagère. Évolutions des approches géographiques, in: Géocarrefour 81/4 (2006), 311–318.
5 Evander Eloí Krone, Identidade e cultura nos *Campos de Cima da Serra* (RS): práticas, saberes e modos de vida e pecuaristas familiares produtores do queijo serrano, Porto Alegre 2009.
6 Roger Brunet, Le territoire dans les turbulences, Montpellier 1990.
7 Elisabeth Lopez/José Muchnik, Petites entreprises et grands enjeux: le développement agroalimentaire local, Paris 1997, 23.
8 Guy Di Méo, Introduction à la géographie sociale, Paris 2014, 86–89.
9 Jorge Jordana, Traditional foods: challenges facing the European food industry, in: Food Research International 33/3–4 (2000), 147–152.
10 Torre/Vollet, Aux fondements, 11.
11 Gabriel Colletis/Bernard Pecqueur, Révélation de ressources spécifiques et coordination située, in: Economie et Institutions 6–7 (2005), 51–74.

tures and identity, in order to offer specific and differentiated goods and services.[12] For this, increasing participation of the local population in decision making and innovation processes is needed, based on the legitimacy of territorial governance, which involves the local actors in the definition of common projects for future development.[13] Here, innovations are territorial, meaning that they are a response to a problem or a need identified collectively in a territory, with the aim of improving well-being and supporting sustainable local development.[14] Such innovations call on the inventiveness of local populations. They are set up and adopted by the networks of actors and are not only technical, but also social, organisational, or institutional.[15]

Cooperative relations between actors are a central element of governance. They allow communication, better reflexive capacity, and circulation of information in order to make better decisions. Social capital, understood as the "norms and networks that facilitate collective action",[16] is the resource that needs to be mobilised to cooperate and innovate. This requires two forms of social ties: first, strong ties connecting individuals who are close (family, friends) and socially homogeneous; second, weak ties linking individuals who are more distant, dissimilar in a demonstrable fashion, and have different occupational status.[17] Marginalised mountain territories often lack the combination of these two forms of social capital, a shortcoming which restricts their innovations and information flows due to organisational issues and leads to difficulties in developing endogenous projects.[18]

The aim of this study is to better understand the role of weak and strong ties in reconciling tradition and innovation. It is based on a historical analysis that provides insights into the foundations of the current configuration of the value chain. We aim to uncover the conditions of its development, its tradition, as well as its potential and limitations for innovation. We focus on the case of artisanal Serrano cheese, a traditional mountain cheese in southern Brazil. Serrano cheese is produced by peasants and sold to end consumers either directly or via traders. However, this chain remains informal; the cheese sales have even become illegal as a result of changed consumer preferences and new hygiene standards incompatible with small-scale and artisanal production.

The article is structured as follows: the initial sections outline the conceptual framework. After defining the notion of "peasantry" and the role of social capital in shaping the relationships of the various actors involved, we explore the importance of tradition and territorial innovation for development. Then, after describing the material used in the case study, we present the area, the production systems, and the current situation of the Serrano cheese value chain. Subsequently, we narrate the historical development of this value chain in four periods. The first two periods (1700–1825 and 1825–1950), corresponding to the origins of Serrano

12 Bernard Pecqueur, Qualité et développement territorial: l'hypothèse du panier de biens et de services territorialisés, in: Économie rurale 26/1 (2001), 37–49.

13 André Torre, Théorie du développement territorial, in: Géographie, économie, société 17/3 (2015), 273–288.

14 Akim Oural, L'innovation au pouvoir! Pour une action publique réinventée au service des Territoires. Rapport établi avec l'appui du secrétariat général pour la modernisation de l'action publique, Paris 2015, 7.

15 Torre/Vollet, Aux fondements, 19.

16 Michael Woolcock/Deepa Narayan, Social capital: implications for development theory, research, and policy, in: The World Bank Research Observer 15/2 (2000), 225–249, 226.

17 Nan Lin et al., Social resources and strength of ties: Structural factors in occupational status attainment, in: American Sociological Review 46/4 (1981), 393–405; Mark Granovetter, The strength of weak ties: A network theory revisited, in: Sociological Theory 1 (1983), 201–233.

18 Torre/Vollet, Aux fondements, 11–12.

cheese production and the beginning of its trade, allow a better understanding of the later developments. The two more recent periods (1950–2000 and 2000–today) correspond to the diffusion of technical innovations and the emergence of collective organisation within the value chain, and are presented through the lens of social capital. Finally, the discussion and conclusion connect the historical development with the aspirations to territorial innovation which shape the current situation.

Theoretical framework

Building resilience of traditional mountain cheese value chains: the role of social capital

Endogenous organisations provide the capacity to resist economic pressure.[19] In this sense, peasant farming and traditional production are interesting objects for the study of resilience, because peasants preserve and transmit know-how from generation to generation and encourage a focus on the quality of products instead of quantity by not following the economic mainstream. Before continuing our case study, we will define "peasant", a term that seems more appropriate for this context than "farmer" or "smallholder". The definition given by Shanin assigns the following features to "peasantry":

> "The family farm as the basic multi-functional unit of social organisation, soil management and usually animal rearing as the main means of livelihood, a specific traditional culture closely linked with the way of life of small rural communities and multi-directional subjection to powerful outsiders".[20]

Also, peasantry is typically characterised by a gender division of labour and gendered internal power relations.[21] Peasants are extremely diverse and can belong to many different social classes and ethnic groups, as well as farming systems, around the world.[22]

Chayanov was the first author to explain that peasantries meet their subsistence needs through the balance between the level of satisfaction of family needs and the level of hardness of work. In fact, peasant farming has a different economic logic from either capitalism or socialism, as maximising profit is not the main aim.[23] An activist definition, such as that developed by La Vía Campesina, characterises peasantries as "people of the land", having a

19 Ika Darnhofer, Strategies of family farms to strengthen their resilience, in: Environmental Policy and Governance 20/4 (2010), 212–222.

20 Teodor Shanin, The nature and logic of the peasant economy 1: A generalisation, in: Journal of Peasant Studies 1/1 (1973), 63–80, 63–64.

21 Carmen Diana Deere, What Difference Does Gender Make? Rethinking Peasant Studies, in: Feminist Economics 1/1 (1995), 53–72.

22 Marc Edelman, What is a peasant? What are peasantries? A briefing paper on issues of definition. Prepared for the first session of the Intergovernmental Working Group on a United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas, Geneva 2013, 15–19.

23 Alexandre Chayanov, The theory of peasant economy, ed. by B. Kerblay/R.E.F. Smith/D. Thorner, Homewood, IL 1966.

direct and special relationship with the land and nature through the production of food and/or other agricultural products on a small scale.[24] This definition implies that being a peasant is an act of resistance against the globalisation and industrialisation of food production and distribution.[25] Similarly, Van der Ploeg characterised peasantries by their struggle for autonomy, arising from a reaction to excessive dependence on agribusiness. Inventiveness, the ability to value and arrange the environmental and social resources at their disposal, and the ability to reconfigure the market are the strengths of peasantry in facing agribusiness.[26]

We apply the concept of social capital to analyse the social ties within the value chain. Here we will use the definition given by Woolcock and Narayan, who define social capital as "the set of norms and networks that facilitate collective action".[27] Social capital corresponds to a synergy between a normative and a structural dimension, which depend one on another.[28] The first dimension is related to the norms and values (e.g. trust) that govern interactions between agents. The second determines social capital by its structural characteristics, that is the formal framework within which the relations between the agents are established. This dimension relates to the configuration of networks (e.g. their density and hierarchy) and relies on recognised roles of individuals.[29] Social capital assists the flow of information by sharing experiences and know-how; it also allows reflections and communication between actors in order to make smarter decisions.

Forms of social capital can be distinguished according to the density of social ties, which corresponds to the combination of the amount of time, emotional intensity, intimacy, and reciprocal services between actors. Thus, different types of social capital have been defined according to the configuration of their ties.[30] First, bonding social capital connects individuals within the same community, actors belonging to the same group – relations within the family and to close friends as well as within communities. Bonding links are strong ties;[31] they need to be constantly reactivated to make the social capital a useful resource.[32] Second, bridging social capital consists of relationships where the actors are distant from each other. The latter notion refers to both their physical distance and the discontinuity in the activation of the link. Finally, linking ties characterise interactions between actors belonging to different groups. These links are vertical in nature. In this type of relationship, actors have different status or belong to different organisational levels. Linking and bridging ties are considered "weak", connecting more distant individuals, who occupy different places or statuses and are dissimilar in a demonstrable fashion (i.e. age, education).[33]

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24 La Vía Campesina, Declaration of Rights of Peasants – Women and Men, 2009, https://viacampesina.org/en/declaration-of-rights-of-peasants-women-and-men/ (last visited in Oct. 2019).

25 Cf. Jan Douwe Van der Ploeg, The new peasantries: struggles for autonomy and sustainability in an era of Empire and Globalization, London 2008.

26 Ibid., 17–18, 49–50.

27 Woolcock/Narayan, Social capital, 226.

28 Robert Putnam, The prosperous community, in: The American Prospect 4/13 (1993), 35–42.

29 Emmanuel Lazega, Réseaux sociaux et structures relationnelles. Que sais-je?, Paris 2014, 38–73.

30 Michael Woolcock, Social capital and economic development: Toward a theoretical synthesis and policy framework, in: Theory and Society 27/2 (1998), 151–208.

31 Granovetter, Strength.

32 Valérie Angeon/Jean-Marc Callois, Fondements théoriques du développement local: quels apports du capital social et de l'économie de proximité?, in: Économie et Institutions 6/7 (2005), 19–50.

33 Granovetter, Strength, 202–204.

Bridging and linking social capital (with weak ties) allows developing new ideas and values, facilitates information flows, and is indispensable to individuals' opportunities for integration into communities.[34] In contrast, bonding social capital (with strong ties) has a psychological role: it brings local cohesion but can lead to overall fragmentation and lock-in situations; a one-sided focus on being embedded in communities with a concentration on bonding social capital may weaken the ability to innovate.[35] Woolcock frames social capital with the notions of "embeddedness" and "autonomy".[36] We can understand bonding and bridging social capital on an individual level as providing embeddedness and autonomy respectively. On a collective level, we could understand tradition as providing embeddedness (bonding) and innovation as a result of autonomy (bridging). However, only the simultaneous presence and balance of embeddedness and autonomy, also in the sense of tradition and innovation, leads to progressive development and resilient communities.

The strength of a tie can be measured by the frequency and duration of contact, with strong ties assumed to be more frequent and longer ones. Social homogeneity is also an interesting indicator to define the strength of ties, in that strong ties connect socially homogeneous individuals while weak ties cross social distances and differences in occupational status.[37] In conclusion, social capital, in particular the strength of ties between actors, appears to be a relevant concept for analysing the resilience of traditional food value chains, especially the capacity to reconcile the maintenance of traditions with the development of territorial innovations. In this contribution, we apply the concept of social capital in a qualitative way. We do not aspire to measure the frequency, duration, or homogeneity of relations with numerical values, but rather analyse the functional consequences of weak and strong ties for maintaining tradition and introducing innovation.

What is the meaning of traditions in traditional food value chains?

Practices of extensive animal husbandry in mountain areas are adapted to the constraints of a harsh environment. For example, transhumance is a usual practice to benefit from the availability of forage at different altitudes and in different seasons (summer and winter pasture). These practices, considered traditional, include specific know-how transmitted from generation to generation. Tradition also refers to collectivity as a way of organising collective memory.[38] Raffestin and Bresso define tradition as "a repetition of similar operations, where the experiences are memorised, accumulated and then transmitted".[39] Tradition is something self-evident and allows acting within determined limits, without distinguishing between

34 Michael Woolcock, The place of social capital in understanding social and economic outcomes, in: Canadian Journal of Policy Research 2/1 (2001), 11–17.

35 James Coleman, Social capital in the formation of human capital, in: American Journal of Sociology 94 (1988), 95–120, 101–118.

36 Woolcock, Social capital, 162.

37 Peter Marsden/Karen Campbell, Measuring tie strength, in: Social Forces 63/2 (1984), 482–501.

38 Anthony Giddens, A vida em uma sociedade pós-tradicional, in: Anthony Giddens et al. (eds.), Modernização reflexiva: política, tradição, estética na ordem social moderna, São Paulo 1997, 73–133.

39 Claude Raffestin/Mercedes Bresso, Tradition, modernité, territorialité, in: Cahiers de géographie du Québec 26/68 (1982), 185–198, 187.

knowledge and practices. The aspects that characterise tradition include rituals, understood as part of the social structures that give integrity to traditions.[40] Time is an important factor, but not the main or only determinant, since a practice does not need to be old to be defined as traditional. It must have a dimension of involvement with the past and one of persistence in the present. In traditional cheese value chains, the cheeses studied are traditional not only because they have been produced for more than 200 years, but because they are connected to knowledge and practices that, for some reason, make sense for the actors involved and in their view deserve to be preserved. For tradition to be alive, it must be significant in the present,[41] and it is not only the product itself that has to be preserved (for example a cheese), but an entire set of representations, symbols, and identities, created and recreated from it. Tradition provides no means of dealing with unforeseen situations; new practices are developed, but they take the form of incremental adaptations over the long term. Tradition evolves over time and is permanently under reconstruction by its "guardians" (in our case, cheese makers). These "guardians" have the legitimacy to interpret traditional practices,[42] for example, to alter the production process, to develop new packaging, or to experiment with new ways of working together. In other words, tradition is not the opposite of modernisation. Innovation appears as a key element in traditional value chains, because it allows a constant adaptation to maintain the resilience of such territories.[43]

Innovation processes at the heart of the resilience of traditional food value chains

Territorial innovations, defined as a new response to a problem or a need identified collectively in a territory, with a view to improving well-being and sustainable local development,[44] are central elements for maintaining the resilience of territories and their processes depend largely on territorial governance. Territorial innovations involve not only technological innovation, which generally dominates national policy, but are more complex processes that include other forms of innovation, organisational, social, and institutional, related to governance and based on social and cultural foundations.[45] In this way, innovation processes most often do not correspond to a linear model in which innovation is developed by scientists and taken up by practitioners. Rather, they appear to unfold independently of new scientific knowledge or simultaneously with it, with other forms of knowledge such as tacit knowledge or social capital coming into play, and with learning processes occurring in local social networks.[46] Organisational innovation is central in the sense that it provides favourable condi-

40 Giddens, A vida, 83.
41 Cf. Fabiana Thomé da Cruz, Produtores, consumidores e valorização de produtos tradicionais: um estudo sobre qualidade de alimentos a partir do caso do queijo serrano dos Campos de Cima da Serra – RS, PhD thesis in Rural Development (Programa de Pós-Graduação em Desenvolvimento Rural, Faculdade de Ciências Econômicas, Universidade de Federal do Rio Grande do Sul), Porto Alegre 2012.
42 Giddens, A vida, 96.
43 Torre/Vollet, Aux fondements.
44 Oural, L'innovation, 7.
45 Torre/Vollet, Aux fondements, 19.
46 Lorna Dargan/Mark Shucksmith, Leader and innovation, in: Sociologia Ruralis 48/3 (2008), 274–291.

tions for collective organisation and for further innovations.[47] Indeed, territorial innovation comes from the creative energy of local actors sharing the same mental representations.[48] Mountain areas, often characterised as peripheral regions with many physical constraints, instead appear as unexplored niches with their own potential for innovation, where the territory is the place of transformations and innovations with a collective and organisational dimension.[49]

Local actors in these territories contribute to the creation and also to the acceptance of innovation. The diffusion of innovations occurs in the territory when their appropriation and learning are successful among the actors. Nonetheless, political orientations defined at higher levels (i.e. regional or national) appear instrumental in favouring or impeding the emergence and diffusion of innovation at the local level.[50] Territorial innovations enable the transformation of generic resources into territory-specific resources, allowing an escape from competition with standardised products, in effect creating a "distinguishing advantage".[51] Eventually, innovations can lead to important modifications of the initial model.[52]

Methods

In considering the Serrano cheese value chain, the concept of social capital will be used to understand how territorial innovations emerge and develop over time, and also how traditions are maintained, pointing out the role of central actors in these processes.

The information needed was first collected through semi-structured interviews with local actors during three sessions of fieldwork. The first fieldwork was carried out in February 2017, the second session in August and September 2017, and the third in March 2018. A total of 67 producers were interviewed about the technical aspects of production and commercialisation, as well as the historical and social aspects of the value chain. More precisely, we asked about their level of involvement in associations (i.e. position in the association, frequency of participation in monthly meetings), their qualitative assessment of trust relations and the frequency of meetings with other actors of the value chain, and the evolution of the production systems and means of commercialisation since the beginning of their activity.

Agricultural advisors (EMATER-RS[53] in Rio Grande do Sul and EPAGRI-SC[54] in Santa Catarina), veterinarians, and municipal functionaries of agriculture in eight different municipalities in the Campos de Cima da Serra region were also interviewed. These interviews inquired as to the organisation of the value chains, its evolution over time since the 1950s (the

47 Andréa Finger-Stich, L'innovation au pluriel des cré-acteurs alpins, in: Journal of Alpine Research 97/1 (2009), 66–75, https://journals.openedition.org/rga/809 (last visited 22 Oct. 2019), DOI: 10.4000/rga.809.

48 Torre/Vollet, Aux fondements.

49 Jean Corneloup, Comment est abordée la question de l'innovation dans les sciences sociales?, in: Journal of Alpine Research 97/1 (2009), 113–128, https://journals.openedition.org/rga/828 (last visited 22 Oct. 2019), DOI: 10.4000/rga.828.

50 Torre/Vollet, Aux fondements.

51 Corneloup, Comment est abordée, 116.

52 Torre/Vollet, Aux fondements.

53 Brazilian Company of Technical Assistance and Extension Rural in the Rio Grande do Sul state, created in 1955.

54 Company of Agricultural Research and Rural Extension of Santa Catarina, created in 1956.

beginning of technical innovation diffusion by the advisory services), and current conflicts between actors of the value chain. We also asked these actors to describe their activities, the frequency of their visits to the farms, and to assess the quality of their relationships with the producers (i.e. trust). Finally, one interview was conducted at the head office of EMATER-RS in Porto Alegre and two at the regional office of EPAGRI-SC in Lages to gain insights about the value chain organisation from the regional and state perspective. We also interviewed a deputy of the Rio Grande do Sul state assembly involved in supporting the artisanal Serrano cheese value chain to ask about the actions taken at the state and federal levels for the legalisation and recognition of the cheese.

Then, semi-structured historical interviews ("farm biographies") were conducted with two families of producers. They provided important details about the history of their properties since the nineteenth century and of the evolution in production systems and the organisation of the value chain over time, as well as the development of other activities in the region.

Additionally, historical and scientific literature, such as narratives, master and PhD theses written about the region and the artisanal Serrano cheese value chain were consulted.[55]

The artisanal Serrano cheese value chain today

Localisation

The artisanal Serrano cheese is a traditional raw milk cheese, produced as a by-product of beef cattle farming in the Campos de Cima da Serra in the states of Rio Grande do Sul and Santa Catarina. The Campos de Cima da Serra region is mountainous, with 77 percent of the area at altitudes between 700 and 1,100 metres, the highest peak reaching 1,822 metres. The region is located at the transition between the Atlantic Forest and the Pampas biome. The climate is temperate, with average temperatures between 8° Celsius in winter, with some frost and snowfalls, and 19° Celsius in summer. Average precipitation is 1,500 to 2,000 millimetres, spread across the year. The ecosystem is made up of plateaus of natural pastures, where the species *Andropogon lateralis* and *Schizachirium tenerum* dominate, and isolated stands of araucaria forests (*Araucaria angustifolia)*. The soils are shallow, with rocky outcrops. Fertility is low and comes from the decomposition of volcanic rock. The relief is wavy and the eastern side of the region is characterised by the presence of canyons.[56]

16 municipalities in the federal state of Rio Grande do Sul and 18 in that of Santa Catarina produce artisanal Serrano cheese, together making up the Campos de Cima da Serra region (Figure 1). Population density is low, with an average of 10.2 inhabitants per square kilometre (compared to overall averages of 38.0 for Rio Grande do Sul and 65.3 for Santa Catarina).[57]

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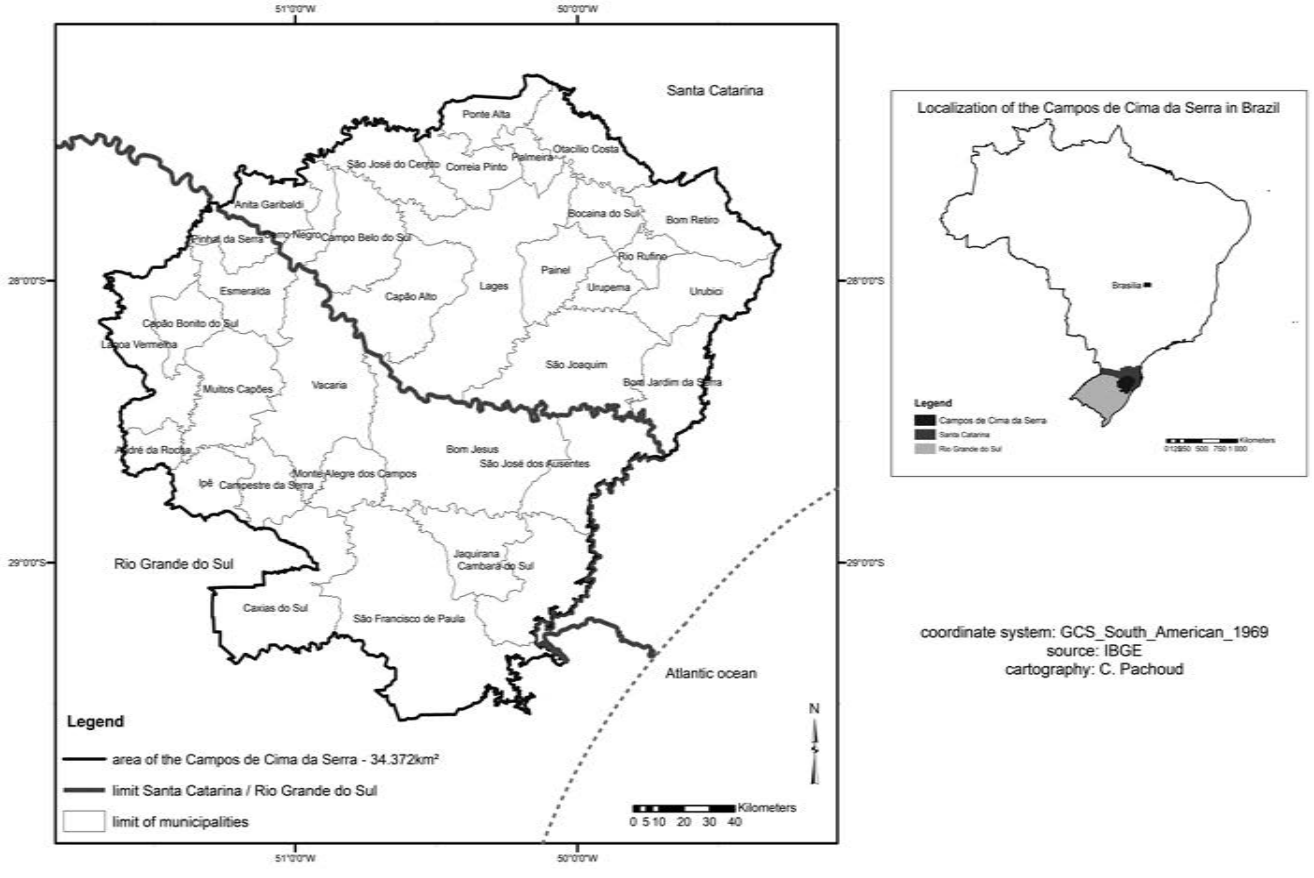
55 Fidelis Dalcin Barbosa, História do Rio Grande do Sul, Porto Alegre 1976; Moacir Flores, História do Rio Grande do Sul, Porto Alegre 2003; Krone, Identidade; Cruz, Produtores; Lucila Maria Sgarbi Santos et al. (eds.), Raízes de Bom Jesus e São José dos Ausentes, XXIV Encontro dos Municípios originários de Santo Antônio de Patrulha, Companhia Rio-Grandense de Artes Gráficas (CORAG), Porto Alegre 2016.

56 Francisco Vieira/Denilson Dortzbach, Caracterização ambiental e delimitação geográfica dos *Campos de Cima da Serra*, Florianópolis 2017, 13.

57 Atlas Socioeconômico Rio Grande do Sul, Índice de Desenvolvimento Humano – IDH e IDHM, https://atlassocioeconomico.rs.gov.br/indice-de-desenvolvimento-humano-idh-e-idhm (last visited 26 Jun. 2018).

Figure 1: Localisation of the municipalities producing artisanal Serrano cheese



Source: Instituto Brasileiro de Geografia e Estatística (IBGE), cartography by Carine Pachoud.

Today around 460,000 people live in the region; the two biggest cities are Lages/SC, with 158,500 inhabitants, and Vacaria/RS, with 65,400 inhabitants. Thus, 2.6 percent of the population live in 8.9 percent of the total territory of the two states. The Human Development Index is lower on average than for either of the two states overall, at 0.694 in the Campos de Cima da Serra region, compared to 0.746 in Rio Grande do Sul and 0.774 in Santa Catarina.[58] This region is isolated, with low infrastructure development (transport axis, information and communication technologies).[59]

Production systems

Livestock farming is the prime economic activity in the region.[60] More than 90 percent of its farms are small-scale, family-owned cattle-breeding systems. A total of 3,000 families produce artisanal Serrano cheese and for most of them this is the principal economic activity, providing more than 50 percent of revenue.[61] The most common production system is an extensive mixed dairy-beef livestock system, with dairy and beef cattle simultaneously on the same farm. The breeds are mainly European ones, such as Hereford, Devon, Charolais, Jersey, and Holstein cows, though some are local, like Girolanda or Franqueiro. Only a few cows in any herd are milked for cheese production, with the others left to provide milk for the calves. They are milked once a day and the women generally take over the processing of milk into cheese. Milk productivity is low – the average yield of a cow is 8.0 litres per day, compared to 19.3 litres for specialised dairy farms in the EU-15.[62] The herds graze on the natural pastures all year round, supplemented by temporary grazing on managed pastures of oats and ryegrass. In winter, to supplement the shortage of natural forage, a concentrate feeding of soya or maize silage is given especially to the lactating cows. Ambrosini identified six different production systems, all of them peasant farming systems. Five of these are considered traditional breeding systems (mixed dairy-beef systems), the distinctive factors being the presence or absence of breeding and/or fattening calves and the presence or absence of commercial crops on the property. Only one system has been identified as an intensive dairy system, which means that there is a separation between dairy and beef breeds, no fattening of the calves, and cows are milked twice a day. However, this intensive system represents only 3 percent of the farms producing artisanal Serrano cheese. The six farming systems are:

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58 Instituto Brasileiro de Geografia e Estatística, Estimativas da População, https://www.ibge.gov.br/estatisticas-novoportal/sociais/populacao/9103-estimativas-de-populacao.html?=&t=o-que-e (last visited 26 Jun. 2018).

59 Larissa Ambrosini, Sistema agroalimentar do Queijo Serrano: estratégia de reprodução social dos pecuaristas familiares dos Campos de Cima da Serra – RS, Master thesis in Rural Development (Programa de Pós-Graduação em Desenvolvimento Rural, Universidade Federal do Rio Grande do Sul), Porto Alegre 2007.

60 Evander Eloí Krone/Renata Menasche, A formação da pecuária de corte e da produção tradicional do Queijo Serrano dos *Campos de Cima da Serra*, in: Paulo Waquil et al. (eds.), Pecuária familiar no Rio Grande do Sul: história, diversidade social e dinâmicas de desenvolvimento, Porto Alegre 2016, 169–184.

61 Jaime Eduardo Ries et al., Aprocampos – uma experiência de sucesso na qualificação e valorização do queijo artesanal Serrano, Emater-RS 2014, 50–62, 54.

62 Marie-Laure Augère-Granier (European Parliamentary Research Service), The EU dairy sector. Main features, challenges and prospects, http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/630345/EPRS_BRI(2018)630345_EN.pdf (last visited 15 Jun. 2019).

1) Raising calves with feed produced on the farm (corn, soya, and managed pasture)
2) Raising, reproduction, and fattening of cattle with feed produced on the farm
3) Raising calves with feed produced on the farm for their own herd and for commercialisation (corn, soya, beans)
4) Raising and reproduction of cattle with feed produced on the farm for their own herd and for commercialisation
5) Raising, reproduction, and fattening of cattle with feed produced on the farm for their own herd and for commercialisation
6) Dairy system without raising of calves[63]

Table 1 presents the size and production of 67 family farms producing artisanal Serrano cheese in the Campos de Cima da Serra region. The data was gathered in February 2017, August/September 2017, and March 2018.

Table 1: Production and size of properties producing artisanal Serrano cheese

	Average	Minimum	Maximum
Number of cattle	90,6	14,0	800,0
Number of cows milked	14,4	3,0	40,0
Milk production (L milk/cow/day)	8,0	2,0	20,0
Cheese production (kg cheese/day)	10,5	2,0	70,0
Total area (ha)	132,2	6,5	980,0
Area of natural pastures (ha)	96,7	3,0	90,0
Area of managed pastures (ha)	17,5	2,0	70,0

Source: Own calculation.

Agricultural advisory services

Agricultural advisory services form an important resource for these production systems. As the case study region spans two federal states, two different institutions are present to fulfil this function. EPAGRI-SC is the public Company for Agricultural Research and Rural Extension of Santa Catarina. It is connected to the office of the Secretary of State for Agriculture and Fisheries and was created in 1991. However, advisory services had already existed in the state since 1956. There are two regional offices located in Lages and São Joaquim, and every municipality has its own local office. At the regional scale, one advisor coordinates a group of 18 advisors (one in each municipality) working especially on the artisanal Serrano cheese value chain.

EMATER-RS is the Company of Technical Assistance and Rural Extension in the Rio Grande do Sul state, created in 1955. This institution is private and has no agreements with

63 Ambrosini, Sistema agroalimentar, 95–124.

the federal Ministry of Agriculture, Livestock, and Supply (MAPA) to implement joint projects with EPAGRI-SC. There is one regional office in Caxias do Sul and one state office in Porto Alegre. All municipalities have their own office with one or several advisors working directly with the producers. At EMATER-RS, there is no group dedicated to the Serrano cheese value chain. The advisors are expected to deal with all activities in which the service is involved and all kinds of productions.

Legal situation

The Brazilian legal framework does not permit the selling of raw milk cheese with less than 60 days of maturation since law no. 1,283[64] came into force in 1952 through regulation no. 30,691.[65] Most Serrano cheese makers do not respect this restriction because consumers prefer young cheese to matured cheese. They therefore sell their produce within less than 30 days, which makes the sales illegal.

Moreover, the sanitary norms for dairy products in Brazil do not consider the specificities of artisanal production, but subject them to the same sanitary standards and require the same facilities as for big dairy industries, making it impossible for small-scale farmers to comply because of the high costs of adaptation. Furthermore, producers claim that the high standards have a negative impact on artisanal characteristics of the cheese, for example, by requiring them to replace wooden moulds with plastic ones. The producers feel marginalised and the informality of production and the illegality of sales leads to greater health risks for the consumers in the long run, as there is no sanitary control.[66]

In Brazil, regulatory systems exist at different levels: municipal, state, and federal, each with their own control bodies. The Municipal Inspection Service (SIM) establishes and controls the sanitary norms for production and sale of artisanal Serrano cheese, but only for mature cheese, ripened for more than 60 days. This is a precondition for selling the cheese, but only within the area of the municipality. The veterinarians employed by the municipal prefectures in principle inspect the health of herds and the adequacy of infrastructure, supported by EMATER-RS and EPAGRI-SC. However, take-up by the producers is low. The main difficulties for small producers are the high costs of complying with the rules, without credit facilities or subsidies, and the cost of the annual inspection of the herd for control and eradication of brucellosis and tuberculosis (a national program of the MAPA). This includes the vaccination of female calves three to eight months old against brucellosis, testing for brucellosis and tuberculosis, as well as inspection of the chemical and microbiological quality of the water and of the microbiological quality of the cheese once a year. Moreover, most of the milk processing facilities are very far from the required norms and the lack of prospects for passing the farm on to the next generation makes the producers reluctant to invest in new equipment. However, requirements can vary between the different SIMs because there

64 Presidency of the Republic of Brazil, Lei no. 1,283, 18 Dec. 1950, Dispõe sobre inspeção industrial e sanitária dos produtos de origem animal, Presidência da República, Casa Civil, Brasília.

65 Presidency of the Republic of Brazil, Decreto no. 30,691, 29 March 1952, Aprova o novo Regulamento da Inspeção Industrial e Sanitária de Produtos de Origem Animal, Presidência da República, Casa Civil, Brasília.

66 Cruz, Produtores, 33.

is no standardisation of the norms between the municipalities; for example, only some SIMs mandate attending a course on cheese production. In Santa Catarina, an Intermunicipal Consortium (CISAMA) exists between the 18 municipalities producing artisanal Serrano cheese, which allows uniform requirements by the different SIMs. However, given the lack of market within the municipalities, most producers sell outside them, and thus the SIM certification seems useless to them. Thus, relations of proximity and trust between producers and consumers seem to be more important than standardisation.[67]

At the state level, in Rio Grande do Sul a law authorising the sale of cheese throughout the state was signed in 2016 (law no. 14,973)[68] and the decree was approved in August 2018 (decree no. 54,199).[69] In Santa Catarina a law was signed in September 2016 (law no. 17,003/2016)[70] and the decree in July 2017 (decree no. 1,238/2017),[71] but until today no producer has acquired the state legalisation. To date, there is no regulation at the federal level to authorise the marketing of artisanal Serrano cheese throughout Brazil as a whole. These two levels apply stricter norms than the municipal level, which would make it more difficult for the producer to legalise commercialisation of cheese at the state or federal level. However, the SIM can confer the SUSAF[72] or the SISBI-POA[73] label, which correspond to the equivalent state and federal certification, if they have authorisation from the state or the federal authorities after an inspection of the SIM.[74] Currently, only the SIM of São Francisco de Paula/RS is authorised to award the SUSAF label and only one producer obtained this certification in 2017. No producer has the SISBI-POA label, because no municipality has yet received authorisation to award it. In Santa Catarina, CISAMA has been authorised by state and federal inspection services to confer the SUSAF and SISBI-POA labels on dairies which respect the standards required in all the municipalities of the producing region. The major problem is that complying with federal or state inspection services represents high costs for

67 Jaqueline Sgarbi, Dilemas e desafios na valorização de produtos alimentares tradicionais no Brasil: um estudo a partir do queijo do serro, em Minas Gerais, e do queijo serrano, no Rio Grande do Sul, Pelotas 2014, 224.

68 State of Rio Grande do Sul, Lei no. 14,973, 30 Dec. 2016, Dispõe sobre a produção e a comercialização do queijo artesanal serrano no Estado do Rio Grande do Sul. Assembleia legislativa, Gabinete de Consultoria Legislativa, Porto Alegre.

69 State of Rio Grande do Sul, Decreto no. 54,199/2018, Dispõe sobre a produção e a comercialização do queijo artesanal serrano no Estado do Rio Grande do Sul, Assembleia legislativa, Porto Alegre.

70 State of Santa Catarina, Lei no. 17,003, 1 Sept. 2016 (Regulamentada pelo Decreto no. 1,238/2017), Dispõe sobre a produção e a comercialização do queijo artesanal serrano, no Estado de Santa Catarina, Assembleia Legislativa, Florianópolis.

71 State of Santa Catarina, Decreto no. 1,238/2017, Dispõe sobre a produção e a comercialização do queijo artesanal serrano, no Estado de Santa Catarina, Assembleia Legislativa, Florianópolis.

72 Unified Sanitary State System for Agroindustrial, Artisan and Small-Scale Production, regulated by state decree no. 49,340 of 5 July 2012. The system guarantees the equivalence of the Municipal Inspection Services and Municipal Sanitary Vigilance, by municipality or by means of an intermunicipal consortium, for the production and commercialisation of animal and vegetable products of family agriculture and small-scale production throughout the state territory.

73 Brazilian System of Inspection of Animal Products, which is part of the Unified System of Attention to Agricultural Health (SUASA), standardises and harmonises procedures for inspection of animal products to ensure food safety. The states, the Federal District, and the municipalities can request the equivalence of their inspection services with the SISBI Coordinating Service. To obtain this, it is necessary to prove that they are able to assess the quality and safety of animal products with the same efficiency as the Ministry of Agriculture.

74 http://www.agricultura.gov.br/assuntos/inspecao/produtos-animal/sisbi-1 (last visited 15 May 2018); http://www.agricultura.rs.gov.br/susaf (last visited 15 May 2018).

many municipalities – for example, a second veterinarian and a car are required to inspect the farms, a room is necessary to organise meetings, etc.

Organisation of the value chain

Due to this complexity of the legal framework, most artisanal Serrano cheese is sold locally in the region or in cities nearby (such as Porto Alegre, Caxias do Sul, or Criciúma), by direct sales to consumers or in small markets of the region. Consumers come to the farms to buy, or producers take the cheese to market, or occasionally intermediaries buy on the farms for resale in bigger cities,[75] sometimes in neighbouring regions. There are also new marketing strategies: for example, a trader from São Paulo comes to get cheese from a producer for resale in São Paulo at a higher price, and some people order cheeses by mail.[76]

Historical analysis of the artisanal Serrano cheese value chain: a value chain in constant adaptation

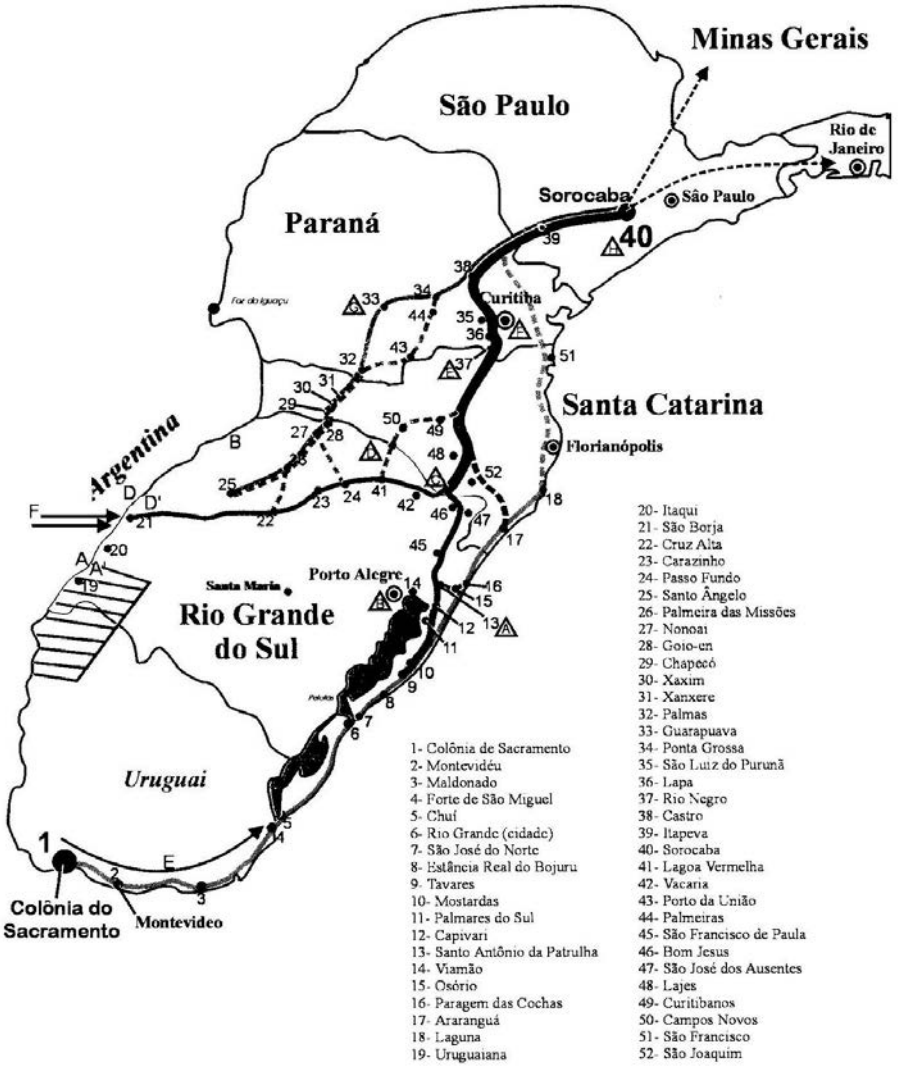
1700–1950: introduction of cattle and development of Serrano cheese production

1700–1825: the settlement of the region and the beginning of Serrano cheese production

Until the end of the seventeenth century, the region was inhabited by indigenous people living by gathering, hunting, and fishing. They also began to cultivate corn and cassava using the slash-and-burn system, but there was still no animal husbandry. The introduction of livestock was the work of the Jesuits. They arrived in the region between 1702 and 1707; their objective was to convert the indigenous people to Catholicism. They decided to settle the area to protect the cattle in the *Vacaria*[77] *del Mar* from being stolen by cattle dealers, so-called *bandeirantes*, interested in the leather. The Jesuits explored the Campos de Cima da Serra and were attracted by the immensity of the natural pastures. Moreover, the canyons and rivers surrounding it served as natural fences for the animals and made access difficult for the cattle dealers.[78] The cattle were used for meat and leather in Jesuit reductions (settlements for indigenous people established by the Jesuits). In 1709 it was estimated that there were about 100,000 head of cattle.[79] In 1750 the region became Portuguese after the signing of the Treaty of Madrid to redefine the frontiers between the Spanish and the Portuguese crown. Fearing that the Jesuits, who were autonomous and very well organised, would form their own theocratic state,

75 Cruz, Produtores, 154.
76 Sgarbi, Dilemas, 141.
77 A *vacaria* was a big reserve for cattle formed by the missionary Jesuits.
78 Cruz, Produtores, 75.
79 Flores, História, 42.

Figure 2: Roads used for the mule and cattle trade in the seventeenth and eighteenth centuries



Source: João Carlos Paixão Côrtes, Danças Birivas do Tropeirismo Gaúcho, CORAG, Porto Alegre 2000, 52.

the marquis de Pombal expelled them in 1759. The indigenous people were decimated, and the Jesuit reductions fell into ruin, allowing wild animals to graze in the natural pastures.[80]

From the end of the seventeenth century onwards, the discovery of gold mines in south-eastern Brazil led to a trade in mules from Argentina and southern Brazil, used to carry gold, and a trade in cattle to supply the lack of food in the mining region, where there were no agricultural activities. This form of trade was called *tropeirismo*.[81] In 1727 and 1733, two roads were constructed through the Campos de Cima da Serra for the mule and cattle traders to pass through on their way to the mining region[82] (Figure 2).

Some Portuguese, early immigrants to São Paulo or Laguna, were attracted by the wild cattle and vast pastures and decided to settle in the region. They were given large estates (*sesmarias*) with the intention of protecting the frontiers and developing agriculture. Land was granted especially to nobles, navigators, or soldiers to reward their services to the crown. One *sesmaria* usually measured around 13,000 hectares, but some families received up to ten *sesmarias*.[83] The new settlers started extensive livestock breeding. The workforce was composed of workers who herded the cattle and processed their milk into cheese, which had to be delivered to the landlord, most of it being given to the workers as salary. Cattle and leather were sold by the landlord of the *sesmaria* on the market. There were up to 30 families of workers per farm.[84] Slaves were probably only used for domestic tasks, agriculture, and construction.[85] Indeed, extensive livestock husbandry needs few workers, and the use of horses for the management of the cattle would have allowed the slaves to escape.

In this context the workers developed a system of subsistence farming, including the production of cheese.[86] The first record mentioning artisanal Serrano cheese dates from 1864, corresponding to the beginning of trade in it, but production may have begun with the installation of the first properties.[87] At that time the cheese, although the landlords kept a part of it for their own consumption, was mainly consumed by the workers. In fact, they used to produce cheese only in summer from the milk of lactating cows. In winter it was not possible to produce any because of a shortage of natural forage, which meant a reduced milk yield. A transhumance system was implemented to handle the shortage of forage during winter. The cattle were driven to the slopes along the rivers, where forests protected them from the cold and provided food. The cheese production during summer allowed the workers to conserve milk for consumption in winter.[88]

In conclusion, during the first century of Serrano cheese production, from the second quarter of the eighteenth century onward, the first farmsteads were established in the Campos de Cima da Serra through land grants to Portuguese people by the crown. However, the

80 Cruz, Produtores, 75.
81 Ivo Pacheco Velho, Bom Jesus: primeiros tempos, in: Sgarbi Santos et al. (eds.), Raízes, 93–99.
82 Barbosa, História, 32.
83 Luiz Antônio Alves, São José dos Ausentes: o marco do povoamento português no Rio Grande do Sul, in: Sgarbi Santos et al. (eds.), Raízes, 25–47, 30.
84 Krone/Menasche, A formação, 76.
85 Ambrosini, Sistema agroalimentar, 55.
86 Krone/Menasche, A formação, 180.
87 Moacir Daros, A prova do Queijo Serrano, in: Elusa Maria Silveira Rodrigues et al. (eds.), Bom Jesus e o tropeirismo no Cone Sul, Porto Alegre 2000, 369–373.
88 Ambrosini, Sistema agroalimentar, 84.

properties were isolated from each other and from cities; some owners used to live outside their property, in more populated areas on the coast, leaving the farm to be managed by the workers.[89] While cattle and leather were destined for the market, the cheese was produced by the workers for their own consumption and served no commercial purpose.

1825–1950: European immigration and the beginning of the artisanal Serrano cheese trade

The nineteenth century marked the end of the imports of cattle and mules to the mining region, because of the decline in gold production as the mines became depleted. However, starting in the first quarter of that century, with the arrival of European immigrants in Brazil, another kind of trade developed. First, Germans, who arrived from the second quarter of the nineteenth century onwards, established themselves in the region of Porto Alegre and Laguna, growing cassava, sugarcane, corn, beans, and tobacco, and producing flour, molasses, and cachaça. These products were exchanged for the artisanal Serrano cheese, pine nuts, and jerked beef produced in the Campos de Cima da Serra region. Groups of dealers riding mules went down the mountain to trade with the Germans. This form of trade was no longer called *tropeirismo*, but *tropeirismo regional*,[90] as trade became regional. From 1860, some Germans bought lands in the Campos de Cima da Serra, because there were attracted by the climate, similar to that in Germany. They began breeding cattle and intermarried with local people.

After 1875 Italians arrived and settled in cities, living as artisans, such as bricklayers or shoemakers, or as merchants. After the Second World War, as they became more prosperous, some bought land in the region like the German immigrants before them and began breeding cattle or married local people.[91]

The trade in artisanal Serrano cheese developed from the first quarter of the nineteenth century. Its value increased thanks to the growing demand with the arrival of new European immigrants. The *tropeiros regionais* were the only people trading cheese with other regions. During this period, the cheese was still matured longer than two months, as the *tropeiros regionais* needed several weeks to bring it from the Campos de Cima da Serra to the littoral and they did so only a few times a year. The production system remained the same, with cheese only produced in summer by workers and transhumance to the forest areas in winter.

In conclusion, these two periods of time are important for understanding the development of the artisanal Serrano cheese value chain. Initially, it was the presence of workers on the farms and also the market for beef and leather that allowed the beginning of its production. Then with the arrival of more Europeans, a new market for the cheese allowed the maintenance of its production and made partitions by heritage possible through the production of cheese on smaller areas. Farms were isolated and there was little exchange between workers on different farms. Cheese was at first mainly produced for subsistence, later also for sale.

89 Krone, Identidade, 30.

90 Ibid., 38.

91 Krone/Menasche, A formação, 179–180; Nilza Huyer Ely, A participação dos alemães na formação étnica, cultural e econômica dos Campos de Cima da Serra, in: Sgarbi Santos et al. (eds.), Raízes, 274–299, 275–276.

In both cases it remained mature cheese, on account of the seasonal production combined with transhumance.

The two more recent periods (1950–2000 and 2000–today) will be presented in the next section through the lens of social capital. They correspond to the diffusion of technical innovations and the emergence of collective organisation within the value chain.

1950–2000: the development of peasant farming and the technical modernisation of artisanal Serrano cheese production

In the Campos de Cima da Serra region, inheritance customs always divided the land equally between the heirs, which led to fragmentation over time. With the decrease in the size of holdings, the former landlords gradually became farmers themselves. Moreover, with new regulations for employment contracts, the hired workforce declined and gradually vanished. We can understand the process as a sort of gradual "peasantisation" of the farmers, which was completed in the middle of the twentieth century. This social group was characterised by family units producing mainly for their basic needs on the farms and selling surplus beef and cheese on the market, with a strong identity guiding their way of life.[92]

Things changed in the following era of modernisation during the 1950s. In 1952 law no. 1,283 came into force through regulation no. 30,691, which prohibited the marketing of raw milk cheese with less than 60 days of maturation. The regulation aimed at standardising production processes and hygiene and was designed under pressure from food industries, disregarding artisanal production.[93] Usually artisanal Serrano cheese is sold at between ten and 30 days of maturation because of new consumer preference; thus, the law made marketing it illegal.

At the same time, an important transition in the traditional agrarian system of extensive cattle and seasonal cheese production occurred in the 1960s and 1970s with the green revolution, called the "conservative modernisation" in Brazil. The green revolution was encouraged by the government to modernise agriculture by diffusing technical innovations to the farms. The inheritances that led to smaller properties facilitated this transition, as cheese became of greater importance for the family income, because dairy production usually utilises the area more intensively than extensive beef production systems.[94] Many properties no longer included both winter forest and summer pasture, but were located either in the pasture or in the forest zone. During that period, European beef breeds (such as Charolais or Hereford) and dairy breeds (such as Holstein or Jersey) replaced the creole cattle and almost led to the extinction of the original Franqueiro breed. These less rustic but more productive breeds demanded a more nutritious diet. Pasture management was introduced with a mixture of oats and ryegrass to graze the herd in the winter during the shortage of natural forage. Such pastures required additional fertiliser and equipment for planting, ploughing, and fertilising. Moreover, the less robust European breeds required better veterinary services: vaccines,

92 Cruz, Produtores, 72–73.

93 Ibid., 159–163; Sgarbi, Dilemas, 141–143.

94 Carine Pachoud et al., Energy analysis of livestock systems. A comparison of different livestock systems in the Eastern Brazilian Amazon, in: Journal of Agriculture and Environmental Sciences 6/1 (2017), 30–37.

vermifuges, and the like.[95] These improvements allowed increasing the cheese production and made it possible to produce all year round without transhumance. From the 1990s, pastures of oat and ryegrass were planted in rotation with vegetables in summer. Indeed, in the early 1990s cultivation of potatoes started, first for seed production and later also for human consumption. Usually the new planters came from outside the region and rented the land from cattle breeders in the summer. Finally, the cultivation of vegetable crops such as broccoli and cabbage arrived in the early 2000s. All these activities led to a significant decline in natural pastures.[96]

Finally, in the middle of the 1990s, tourism developed in the region, especially in the municipalities located close to the canyons, São José dos Ausentes and Cambará do Sul. Breeders themselves were developing infrastructure to host tourists. According to the tourism office of São José dos Ausentes, today there are 18 bed-and-breakfast operations on farms and Serrano cheese is a central ingredient on the menu. An average of 600 tourists visit the municipality per month, rising to up to 5,000 per month in winter. Cold, frost, and snow attract these tourists, the majority being Brazilians from the southeast of the country. The tourism sector is growing fast and expected to increase tenfold in the next 20 years.[97] Today rural tourism appears to be an important element to preserve the extensive breeding system and the production of artisanal Serrano cheese.

In conclusion, it was during this period that the peasant farming system evolved and the agricultural advisory services (EMATER-RS and EPAGRI-SC) were installed. This resulted in an important change in the traditional systems through technical innovations, initiated by the government during the Brazilian green revolution. Public research (Brazilian Agricultural Research Corporation, EMBRAPA) developed the innovations and the advisory services diffused them among the producers. This process did not involve organisational changes among local actors of the value chain as it was a process of individual diffusion of technical innovations. Moreover, it did not affect the methods of cheese production, even if it changed from seasonal to perennial. Producers and advisors were linked by weak ties, as meetings between these two types of actors, of different occupational status, occurred only during the visits of the advisors to the farms. Strong ties linked producers belonging to the same family, usually living on the same farm. In fact, in this period exchanges between families were infrequent, due to their geographical isolation.

Since 2000: emergence of territorial innovations through the progressive involvement of the local actors for the defence and valorisation of artisanal Serrano cheese

At the beginning of the 2000s, the extensive livestock system, mixing beef and cheese production, was still the main activity in the region and accounted for 90 percent of the land

95 Ambrosini, Sistema agroalimentar, 120–121.
96 Ibid., 58.
97 Personal communication of the tourism secretary of São José dos Ausentes, 2017.

use.[98] However, a change in consumer preference had appeared at the end of *Tropeirismo regional* from the middle of the twentieth century, as modern consumers preferred less matured cheese. This clashed with the legal framework and the control of raw milk cheese. Since 2001 health surveillance activities have been reinforced, with the right to control food products in municipalities (law no. 8,080/1990 and decree no. 2,665/2001).[99] Monitoring services impounded cheese without SIM certification or sold outside the municipality. A new federal environmental law prohibited removing any native species of the Atlantic Forest biome without authorisation, natural pasture included (law no. 11,428/2006[100] and decree no. 6,660/2008[101]). As a result, it has become impossible for producers to expand the cultivated pasture areas, often rented during summer for the cultivation of potatoes or vegetables such as broccoli. Thus, this law severely restricts income generation possibilities for peasant family farms.

In this new legislative context, different groups of producers have evolved. On the one hand, families who want to continue marketing cheese and/or to intensify their production are keen to legalise their cheese sales. On the other hand, families who do not want to comply with the current regulations either continue to sell illegally or have stopped producing Serrano cheese and now produce only beef or pasteurised cheese. Some families limit themselves to subsistence production.

To counter the threat of a decrease or extinction of artisanal Serrano cheese production, two mutually non-exclusive strategies have been implemented, largely supported by the agricultural advisory services, EMATER-RS and EPAGRI-SC (Table 2). The first strategy focuses on improving of the legal status of the cheese. The advisory services signed agreements with MAPA. The first one in 2008, between MAPA and EPAGRI-SC (with EMATER-RS participating informally due to its private status), aimed at implementing projects with the objectives of promoting the historical recovery of artisanal Serrano cheese, delimiting the producing region, registering and training producers, analysing physical, chemical, and microbiological characteristics, and describing production and manufacturing processes. This agreement led to regulation no. 214 issued by the State Secretariat for Agriculture, Livestock, Fisheries, and Food Supply (SEAPPA) on 14 December 2010, which established the possibility of producing artisanal Serrano cheese, defined the characteristics, and delimited the producing region. A second agreement in 2013, again between MAPA and EPAGRI-SC (and EMATER-RS informally), aims to organise the value chain and to obtain the status of a protected designation of origin for cheese produced in the Campos de Cima da Serra. The request for this appellation

98 Jaime Eduardo Ries/Luiz Gonzaga Messias, Campos de Cima da Serra: caracterização da região e do pecuarista familiar, EMATER/Porto Alegre 2003.

99 Julio César Corino, Avaliação da atuação da vigilância sanitária municipal de São Francisco de Paula referente ao queijo Serrano, Master thesis in administration, Universidade Federal do Rio Grande do Sul, São Francisco de Paula 2015, 25.

100 Presidency of the Republic of Brazil, Lei no. 11,428, 22 Dec. 2006, Dispõe sobre a utilização e proteção da vegetação nativa do Bioma Mata Atlântica, e dá outras providências, Presidência da República, Casa civil, Brasília.

101 Presidency of the Republic of Brazil, Decreto no. 6,660, 21 Nov. 2008. Dispõe sobre a utilização e proteção da vegetação nativa do Bioma Mata Atlântica. Presidência da República. Casa civil, Brasília.

was submitted to the National Institute of Industrial Property, which has the power to grant such certifications in Brazil, in August 2017.[102]

The second strategy was directed towards improving the organisational capacity of producers and their supply chain. Some producers decided to associate, with support from the advisory services, to develop sustainable solutions. Local actors organised themselves to give more strength and visibility to the product and the region. The first Association of Serrano Cheese Producers of the Campos de Cima da Serra, Aprocampos, in the municipalities of São José dos Ausentes and Bom Jesus, was created in September 2010 with the support of the two local EMATER-RS offices. There are currently around 50 members. On the model of Aprocampos, Aprojaqui was founded in 2012 in the municipality of Jaquirana. In 2017 the municipality of Cambará do Sul decided to join the association, which currently has 26 families as members. Then in 2013, Aproserra was formed, grouping the 18 cheese-producing municipalities in Santa Catarina state, on the initiative of EPAGRI-SC. Today, more than 70 families are members of the association. Lastly, Aprosãochico began in 2016 in the municipality of São Francisco de Paula; only six families producing artisanal Serrano cheese currently belong to it. A federation, Faproqas, was formed in 2017 to align these four associations. This allowed requesting the designation of origin, which would protect artisanal Serrano cheese and its typical quality by recognising the region and the know-how of production.[103]

Many other activities have been undertaken since the associations were created. Aprocampos, as the oldest group, has been the leader of collective action:[104] In May 2013, the designation of immaterial cultural heritage was awarded by the National Historic and Artistic Heritage Institute to recognise and enable the development of policies to preserve the know-how of production. In December 2016, the law was approved, which legalises the production and marketing of artisanal Serrano cheese in the state of Rio Grande do Sul,[105] and the decree was approved in August 2018.[106] In the Santa Catarina state, the law was signed in September 2016[107] and the decree in July 2017.[108] Over and above that, meetings are organised monthly to share information between the members and throughout the associations. Also, members can participate in courses offered by the agricultural advisory services to improve hygiene in milking and cheese making. As the standards of the SIM are not harmonised between municipalities, some require producers to attend the lecture on good practices of cheese making to obtain the SIM label. Lastly, through the associations, the state or private institutions such

102 John Wilkinson et al., Indicações geográficas e produto de origem no Brasil: instituições e redes em ação recíproca, in: John Wilkinson et al. (eds.), O sabor da origem: produtos territorializados na nova dinâmica dos mercados alimentares, Porto Alegre 2016, 73–106, 12–13.

103 Vieira/Dortzbach, Caracterização.

104 Ries et al., Aprocampos.

105 State of Rio Grande do Sul. Lei no. 14,973, 30 Dec. 2016, Dispõe sobre a produção e a comercialização do queijo artesanal serrano no Estado do Rio Grande do Sul. Assembleia legislativa, Gabinete de Consultoria Legislativa, Porto Alegre.

106 State of Rio Grande do Sul, Decreto no. 54,199/2018, Dispõe sobre a produção e a comercialização do queijo artesanal serrano no Estado do Rio Grande do Sul, Assembleia legislativa, Porto Alegre.

107 State of Santa Catarina, Lei no. 17,003, 1 Sept. 2016 (Regulamentada pelo Decreto nº 1238/2017), Dispõe sobre a produção e a comercialização do queijo artesanal serrano, no Estado de Santa Catarina, Assembleia Legislativa, Florianópolis.

108 State of Santa Catarina, Decreto no. 1,238/2017, Dispõe sobre a produção e a comercialização do queijo artesanal serrano, no Estado de Santa Catarina, Assembleia Legislativa, Florianópolis.

as banks give loans at low interest rates to families who want to build dairies on their farms. The Banco do Brasil Foundation offered 80 percent financial backing for the construction of nine dairies. Also, the state of Rio Grande do Sul provided financial support to 15 families, members of the different associations, for the construction of small dairies and to the Aprocampos association to build its head office. In Santa Catarina, Aproserra received funds in 2016 from the state government's SC Rural program[109] to encourage the construction of 32 dairies, covering 50 percent of construction costs for each.[110]

Since the creation of the associations, producers, technicians, and researchers have become more and more active to promote artisanal Serrano cheese, at both the local and the federal level. Thus, in 2011 in Fortaleza/CE and in 2013 in Porto Alegre/RS, EMBRAPA and EMATER-RS organised the first two symposia on artisanal cheese in Brazil. The objective was to discuss topics related to the valorisation, quality, safety, and certification of Brazilian artisanal cheeses. At the regional level, interstate symposia on artisanal Serrano cheese have been held every two years since 2012 by EMATER-RS and EPAGRI-SC, involving all the municipalities producing the cheese. These events are an important space for discussion between producers, technicians, and public authorities on issues related to the production, regulation, and marketing of artisanal Serrano cheese at the national level. In addition, EMATER-RS and EPAGRI-SC regularly arrange Serrano cheese competitions at the local level, where all producers can participate, with or without certification. Moreover, various festivals are organised by the prefectures and the advisory services in different municipalities: for example, the Gila Festival and artisanal Serrano Cheese Festival are held every year in Bom Jesus.

Finally, a new project was started in 2018 by the Brazilian Service to Support Micro and Small Enterprises (SEBRAE) in partnership with the agricultural advisory services to improve marketing strategies for artisanal Serrano cheese, for example, to create better packaging.[111]

These actions by the associations to produce better quality cheese and to promote its sale have already shown results. Indeed, today the average price of a kilogram of cheese is 20.40 *reais* (R$); ten years ago it stood at R$ 7.10, according to estimates in interviews with producers during the three field visits in 2017 and 2018. 50 of the 67 producers interviewed also reported that demand has increased dramatically over the last ten years. One respondent even said, "Sometimes we don't have enough cheese to meet the demand".[112] However, these actions depend mainly on the efforts of the advisory services. Today, in the Campos de Cima da Serra region, 18 families have the SIM certification (twelve in Rio Grande do Sul and six in Santa Catarina), while only one has state certification through the SUSAF label. Many others will soon have their cheese sales legalised: more than 15 families of producers are in the process of certification with the SIM in Rio Grande do Sul state and 24 in Santa Catarina. However, the large majority of producers do not want to legalise, for two main reasons: first, because of the high costs of complying with the standards, and second, because they do not agree with these new standards. According to these producers, standardisation would change the traditional characteristics of the Serrano cheese.

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109 The Rural SC program is an initiative of the state government with financing from the World Bank (Bird) to increase the competitiveness of family agriculture in Santa Catarina.

110 Interview conducted with an extension agent of EPAGRI-SC, Lages, 14 Mar. 2018.

111 Interview conducted with an extension agent of EMATER-RS, São José dos Ausentes, 6 Mar. 2018.

112 Interview conducted with a producer, Bom Jesus, 15 Sept. 2017.

Table 2: Overview of the two strategies implemented from the 2000s to face the threat of decrease or extinction of artisanal Serrano cheese production

Improvement of the legal status of the Serrano cheese	Improvement of the organisational capacity of producers and their supply chain
• SEAPPA regulation no. 214/2010 establishing the possibility of producing Serrano cheese, defining its characteristics and delimiting the producing region • Request for a protected designation of origin in 2017	• Creation of four producers' associations that allowed obtaining or developing: ✓ the designation of immaterial cultural heritage ✓ state laws for the legalisation of the production and the marketing of the cheese ✓ meetings and courses ✓ loans for building dairies ✓ promotional activities • Creation of a federation of the associations which allowed requesting the designation of origin

Source: Own evaluation.

Starting in the 2000s, new organisational and institutional arrangements allowed reinforcing existing links or creating new ones between the actors of the value chain. Thus, advisors and producers are still linked by weak ties. Nonetheless, increasing numbers of opportunities for contact (such as association meetings or courses) improve the level of trust between them. Also, these new arrangements involve additional local actors in the value chain, such as the inspecting veterinarians and municipal functionaries of agriculture, offering opportunities to create new weak ties with the producers. However, producers have demonstrated a lack of trust in these functionaries, which limits interactions. Strong ties link producers belonging to the same family, as was the case during the previous period (1950–2000). Nonetheless, association meetings, courses, or other new opportunities for encounters bring together producers from different families and communities. This reinforces the social capital between the different families and builds up weak ties. With time, it may form a dense group and generate bonding social capital.

Discussion: from technical to territorial innovations – the role of social capital

The period between the beginning of the eighteenth and the middle of the twentieth century saw the development of cheese production and trade in the Campos de Cima da Serra region. At first, from the eighteenth to the nineteenth century, there was a capitalist system with large properties owned by landlords and most farm work done by families of workers living on the farms. The objective of the landlords was to produce leather and beef for the market, while cheese was made mainly for the consumption of the workers; it was produced in summer and could be conserved and consumed all year long. Then, from the nineteenth century until

the 1950s, the cheese began to be exchanged for commodities from other regions, thanks to a new market created by the arrival of European migrants in neighbouring regions. It served as a surplus market good in combination with a strong subsistence orientation and helped to sustain the farming economy even when farm sizes were shrinking as a result of inheritance rules. These two periods are important to understanding how the cheese production developed and was maintained over the centuries.

About 60 years ago, this process of "peasantisation" was completed, due to repeated partitions of holdings between heirs and the nearly complete disappearance of non-family workforce because of the reduction in the size of farms. Until then the social unit was the farm, with little economic exchange and virtually no collective economic activity having developed between farms. We only analyse the social capital within the value chain and the emergence of territorial innovations from that period onwards.

The traditional farming system in the Campos de Cima da Serra region has evolved considerably since the development of the peasant system from the 1950s to adapt to changes. First, from the 1950s to 2000, farms have constantly maintained and increased their resilience by implementing new practices. Nonetheless, technical innovations have been the dominant form of innovations in the artisanal Serrano cheese value chain until the last decade. Most of these were introduced top-down during the green revolution by the advisory services, initially to increase production, but later also to adapt to standards of legalisation following changed consumer preferences. Producers and advisors were linked by weak bridging ties. Meetings between both occurred only during the visits by advisors to the farms. All these innovations and adaptations were made at the level of individual farms and did not involve collective action.

Second, from the 2000s to today a transformation has affected the original network, once characterised by few relations between local actors, through an organisational innovation involving the creation of associations and other collective actions. This can be understood as the beginning of a territorial innovation. Nonetheless, this collective organisation is recent and still faces many problems. The foremost of these is the low involvement of producers and the lack of a culture of cooperation. Few producers have joined associations and not many of the members participate in the monthly meetings. Producers take on few responsibilities and have little autonomy in making decisions for the collective.[113] The agricultural advisory services are the central actors in the organisation of the associations, their interventions are crucial. In this sense, they still operate following a top-down model.

Also, the clandestine nature of the value chain restrains the establishment of relations of trust between producers and other local actors. Production and marketing are hidden, one producer recounted, "who is not seen, is not remembered".[114] The concept of social capital allows a better understanding of the network structure within the value chain and of the sources of innovation.[115] Indeed, trust relations are usually strong among the family members living on the farm, which increases bonding social capital and allows maintenance of tradi-

113 Information was obtained from the interviews with extension agents and participation to monthly meetings of the associations.

114 Interview conducted with a producer, São José dos Ausentes, 14 Sept. 2017.

115 Granovetter, Strength; Robert Putnam, Bowling Alone: The Collapse and Revival of American Community, New York 2000.

tion, transmitted from generation to generation. Distances between farms are great and each family is isolated from the others. Conflicts or denunciations occur between different families of producers, especially between legalised and non-legalised ones, with the latter accusing the former of benefiting from the veterinarians of the inspection services. Bonding social capital, represented by strong family ties which correspond to the production unit, is much more important than the few forms of linking and bridging social capital between different families and communities. For example, the ties between members of the same church or between participants of rodeos are not very strong, as they meet infrequently.

Similarly, bridging social capital between producers and various other actors (veterinaries, politicians, etc.) is low, except for the advisory services, which enjoy a high level of trust from the producers as they are close to the families and have worked with them since the beginning of peasant farming. Moreover, local politicians like the municipal functionaries of agriculture have little involvement in the development of the value chain, resulting in a lack of trust in them. For example, the agricultural functionary is responsible for the management of machinery available for the producers, but the latter often complain that access is difficult and often not available when they need it; likewise, the lack of paved roads within the municipalities inhibits trade and access to meetings.[116] Additionally, there is a disagreement in the perception of sanitary risks of raw milk between the producers and the veterinarians of the inspection services. Only industrial and large-scale production standards are taught at the universities; small-scale and artisanal production is not a subject there. Sometimes conflicts occur because producers want to defend the artisanal raw milk cheese produced from generation to generation, whereas veterinarians see these practices as a potential danger to the health of consumers. The advisory services more often support the point of view of the producers, although they are aware of the necessity of the sanitary norms. However, during the last field visit in March 2018 we saw an increase in communication between producers and veterinarians, who shared and discussed their views on the subject, thus increasing bridging social capital. More and more veterinarians are assuming a role of advisor rather than controller in their dealings with producers.

In this sense, associations allow bringing together producers from different families or communities with other actors (advisory services, veterinarians, local politicians, etc.). This reinforces the social capital between actors of the value chain and builds up weak ties, a key element in information flows and innovation processes. This temporary proximity during meetings is important in reducing the isolation of some producers and in creating opportunities for sharing and discussing the different points of view. Moreover, this diversity of producers and other stakeholders can be a great benefit for the emergence of new ideas and innovations, but also for the maintenance and valorisation of traditions which can be protected through geographical indications. The complementarity of both sides in traditional food value chains is a motor of territorial development.[117] In this case, the agricultural advisory services, which already have well-established links with producers, facilitate the formation of bridging social capital between producers and other actors at association meetings

116 Carine Pachoud/Martin Coy, Relações de proximidade entre atores locais e as dinâmicas de desenvolvimento territorial: análise da cadeia produtiva do Queijo Artesanal Serrano nos Campos de Cima da Serra/RS, in: Revista Brasileira de Gestão e Desenvolvimento Regional 14/2 (2018), 157–182.

117 Torre/Vollet, Aux fondements.

or other occasions such as courses, symposia, or competitions. Given time, this can allow the formation of a dense group with shared language and representations, in other words, the creation of bonding social capital. Moreover, new institutional arrangements appear to be an opportunity for local actors to link with actors at higher levels (such as state deputies) and build weak ties with them.

To sum up, we observe that, on the one hand, the territorial innovations come from the advisory services, which have a better overview of the value chain and its external pressures and information. On the other hand, the focus on traditions seems to come from the producers, transmitting know-how from generation to generation. Thus, innovations sometimes face resistance from producers. For example, many do not want to legalise their production facilities because they want to keep making cheese with wooden moulds instead of plastic ones and prefer to continue to sell on the quiet. Nonetheless, most producers adopt the technical innovations in the long run – for example, all producers today manage pastures. Some appear to be less resistant to technical innovations. Indeed, nine families out of the 67 interviewed have a specialised dairy system, meaning that they separate the dairy herd from the beef herd. Of these nine families, six also have the SIM certification.

The existing literature still provides few studies on the relationship between social capital and resilience in rural areas.[118] Rural resilience determines the degree to which a specific rural area is capable of self-organisation to face changes and shocks[119] and encompasses three dimensions: ecological, social, and economic.[120] Thus, social capital can be seen as the main aspect of social resilience in such areas.[121] According to Hofferth and Iceland, people living in rural areas share more strong ties based on kin than people living in urban areas.[122] Relationships in rural areas are often embedded in networks of close personal ties (strong ties), which are largely based on geographical location and shared norms (i.e. trust) and values.[123] In this point our research differs, as we find that strong ties mainly link producers belonging to the same family living on the farm, but not the producers of the entire rural community. This may result from the physical isolation of the families and poor transport infrastructures, which lead to a lack of interaction between families and therefore to a low level of trust. The high degree of bonding social capital can decrease rural resilience. Indeed, strong ties may obstruct the capacity for learning after changes or shocks and adapting in order to be able to anticipate and respond to further shocks and changes in the future.[124] In rural areas, the

118 Wim Heijman et al., Rural resilience as a new development concept, in: Danilo Tomić/European Association of Agricultural Economists (eds.), Development of agriculture and rural areas in Central and Eastern Europe. 100th Seminar of EAAE, Novi Sad 2007, 383–396; Gonne Beekman et al., Social capital and resilience in rural areas: responses to change, working paper, Mansholt graduate school 2009; Mark Scott, Resilience: a conceptual lens for Rural Studies?, in: Geography Compass 7/9 (2013), 597–610; Lynda Cheshire et al., Community resilience, social capital and territorial governance, in: Revista de Estudios sobre Población y Desarrollo Rural 18 (2015), 7–38.

119 Heijman et al., Rural resilience; Nadine Marshall, How resource dependency can influence social resilience within a primary resource industry, in: Rural Sociology 72/3 (2007), 359–390.

120 Heijman et al., Rural resilience; Beekman et al., Social capital.

121 Beekman et al., Social capital.

122 Sandra Hofferth/John Iceland, Social capital in rural and urban communities, in: Rural Sociology 63/4 (1998), 574–598.

123 Beekman et al., Social capital.

124 Marshall, Resource dependency; Beekman et al., Social capital.

opportunity to develop weak ties providing information and promoting innovation is less,[125] although weak ties may lead to more resilience, as people can exchange information, experience, and capital in case of shocks.[126] In our study, advisors play an instrumental role in increasing the number of weak ties and therefore promoting resilience. Thus, a larger amount of social capital, through a well-balanced combination of weak ties that allow change and innovation and strong ties that allow maintaining traditions, can lead eventually to more resilience in rural areas.[127]

Conclusion

Today, artisanal Serrano cheese is an important resource for cattle breeders in the Campos de Cima da Serra region, as it can represent up to 60 percent of these families' income. Ancestral know-how is still used in production and processing and feeding is essentially based on pastures of natural grasslands, although an intensification of production by the use of corn silage or soya has been observed in recent decades. Since the development of peasant farming and the creation of agricultural advisory services in the 1950s, the technical innovations brought by them have sometimes met with resistance from producers, who wanted to maintain traditional ways; but over time the innovations spread nonetheless.

In the artisanal Serrano cheese value chain, cheese making has been done individually on the farms since the beginning of its history, and there was no cooperation between producers to organise the value chain until the last decade. Indeed, the chain is short since the producer sells cheese directly to consumers at points of sale (cheese shops, markets) or through one intermediary. However, the illegalisation of cheese marketing resulting from the increase of controls, as well as competition with industrial cheese, led to an impasse for the production of artisanal Serrano cheese. In this way, cooperation through producers' associations appeared as one solution for local actors to keep producing and to defend the typical characteristics of the cheese and the related traditions. Nonetheless, this approach is still facing many problems: there is a lack of involvement on the part of producers; the advisory services are the central actors and the only trusted forces with links to the mainstream administration system; and there are many tensions between producers, veterinarians, and local politicians.

The concepts of social capital and strength of ties appear promising for the analysis of resilience and of the ability to reconcile tradition with innovation. Indeed, the advisory services, as central actors in the territorial innovation process, allow the different actors (producers, veterinarians, politicians) to join through linking and bridging social capital. Bonding social capital is present only among the family members within production units. In this sense, peasant families are central actors for the maintenance of tradition by transmitting know-how from generation to generation. However, weak ties are necessary for collective organisation and for innovation to emerge. In this sense, advisory services are key actors in the strengthening of weak ties, which can over time lead to bonding social capital though the repeated interactions between actors. Nevertheless, the analysis shows the instability of local

125 Hofferth/Iceland, Social capital, 577.
126 Woolcock, Place of social capital.
127 Beekman et al., Social capital.

coordination between producers and the necessity for support from the advisory services for the operation of the associations.

Social capital is a central resource for cooperation: bonding social capital allows a dense network and the transmission of know-how from generation to generation, while linking and bridging social capital encourages the emergence of territorial innovations. The combination of both provides the resources to resist and adapt to changes, which forms the basis of resilience of the territory.