Bernd Pölling

COST Action Urban Agriculture Europe: Business Models of Urban Agriculture Short Term Scientific Mission Report

Perugia, Italy 23/03 - 01/04/2015

COST-Action Urban Agriculture Europe

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Short Term Scientific Mission Report

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Author:
Pölling, Bernd

Photography:
Pölling, Bernd

Supervisor:
Prof. Torquati, Biancamaria

Technical and administrative support:
Prof. Dr. Lorleberg, Wolf

Illustrations and resources are under the responsibility of the author

COST Action Urban Agriculture Europe is chaired by:

Prof. Dr.-Ing. Frank Lohrberg
Chair of Landscape Architecture
Faculty of Architecture
RWTH Aachen University

e-mail: science.cost@la.rwth-aachen.de

Professor Lionella Scazzosi
PaRID - Ricerca e documentazione internazionale per il paesaggio
Politecnico di Milano

e-mail: parid@polimi.it

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Index

Main purpose and objective

The main objective of this Short Term Scientific Mission (STSM) "Empiric study – classification of entrepreneurial models of Europe's urban agriculture" aims to classify entrepreneurial models. The aimed classification is mainly based on Italian and German case studies added by good-practices from both countries. These and additional case studies from other European countries were collected in Working Group (WG) 3 "Entrepreneurial models of urban agriculture" of the EU COST-Action "Urban Agriculture Europe" by using a standardized questionnaire developed and tested by WG 3. The main aim of WG 3 is a catalogue of entrepreneurial models of Europe's urban agriculture, wherefore this STSM is contributing (s. figure 1).

Furthermore, this STSM combines the work carried out in WG 3 with contributions from Working Group 1 "Urban Agriculture definitions and CAP" (see 2.2 Existing COST-Action background). Therefore, the work in this STSM is using already conducted work in two of the in total five WGs. This approach, which considers valuable contributions and efforts of more than one WG, shows also the interaction and exchange between WGs in EU COST-Action "Urban Agriculture Europe".

The proposed classification of the STSM is supposed to be open for later adjustments when considering additional case studies from other European countries. The classification of entrepreneurial models offered by this STSM have to be seen as a first draft version, which have to be adjusted in the remaining time of the COST-Action, especially by discussions at the upcoming Working Group Meetings in Sofia, Bulgaria, and Milan, Italy, which are both scheduled for 2015. Mainly the members of WG 3 are requested to support adjustments and improvements here.

Background

The STSM on a classification of entrepreneurial models of urban agriculture took place in Perugia, Umbria, Italy from Monday, 22nd of March until Wednesday, 1st of April 2015. Prof. Biancamaria Torquati from the Department of Agricultural, Food and Environmental Science of Perugia University, who is active in WG 3 of the COST-Action, is teaching and doing regional, national and international research in the field of agronomy. Due to her personal and her department's background in agronomy, Perugia University is a suitable institute to conduct the STSM with the thematic focus on entrepreneurial models of urban agriculture.

Before travelling to Perugia, a thorough investigation of German cases was conducted to be aware of existing German examples of urban agriculture. Most of these cases are – except one community garden in Berlin – located in the Federal State of North Rhine-Westphalia mainly within Ruhr Metropolis and also in Aachen. Thus, the limited time in Perugia of ten days could be used efficiently to focus on investigating, discussing and visiting Italian cases. The case studies from Italy and Germany were used for a draft classification of entrepreneurial models of urban agriculture including examples for specific entrepreneurial models. The work of this STSM is supposed to contribute to the Europe-wide catalogue of urban agriculture's entrepreneurial models of WG 3.

Time schedule

The classification of entrepreneurial models of urban agriculture is based on empiric work conducted in Italy, Germany and other European countries following the standardized questionnaire of WG 3 plus already done contributions from WG 1. The consideration of the definition and typology of WG 1 is the fundament of the work, which was done and discussed at the beginning of the STSM (s. table 1).

Afterwards Italian cases studies were investigated and tried to compare with German cases regarding key similarities and differences to result in an overview of case studies focusing on entrepreneurship. The investigation of Italian case studies was added by excursions to a social farm, cultural heritage as well as educational garden in Umbria and Rome. The STSM's final days were mainly used to connect the contributions of WG 1 with the Italian and German case studies of WG 3 to compile a classification of entrepreneurial models. This classification is supposed to be as open and easily usable as possible to allow additional input from other COST-Action partners and other partner countries.

Table 1: Time schedule of the conducted STSM in Perugia

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
	23.03.2015	24.03.2015	25.03.2015	26.03.2015	27.03.2015	28.03.2015	29.03.2015
Week 1	General organization/ administration; investigation of definition and typology of WG 1	Analyzing Italian case studies (CBM)	Analyzing Italian case studies (CBM); excursion to social farm "La Sementa" in Spello	Integrating existing German cases (CBM) for combination of WG 1 / WG 3 / STSM	Discussion on classification of case studies; excursion to exhibition "AgriUmbria"		Excursion to urban garden "Hortus urbis" in Rome
	30.03.2015	31.03.2015	01.04.2015	Afterwards			
Week 2	All day workshop on business models	developing clusters of entrepreneurial models; excursion to Bosco di San Francesco (Assisi)	selection of good practices for specific clusters of the classification	Setting the draft classification including clusters and good practices for documentation (STSM report) and further use in WG 3			

Photo 1 & 2: View to the Agricultural Department of the University of Perugia and into the garden of the Department

Photo 3: Workshop on business models and more precisely on Business Model Canvas with Ugo Mendes Donelli at the University of Perugia

Existing COST-Action background

The EU COST-Action "Urban Agriculture Europe" addresses the globally growing interest in urban farming, gardening and food issues in Europe (s. Memorandum of Understanding). Urban agriculture includes a huge variety of activities from commercial urban farming in and around cities over urban food gardening initiatives to innovative techniques. This COST-Action is the first approach to address Urban Agriculture on European scale. Five Working Groups of the Action focus on different aspects of urban agriculture (s. figure 1). Working Group 1 "Urban Agriculture definitions and CAP" of EU COST-Action "Urban Agriculture Europe" has defined and classified urban agriculture in a comprehensive way:

"Urban agriculture states that it spans all actors, communities, activities, places and economies that focus on biological production (crops, animal products, biomass for energy…), in a spatial context that, according to local opinions and standards, is categorized as urban."

More specifically, the spatial dimension of urban agriculture takes place from intra- to peri-urban locations. Urban agriculture is not seen as a rural leftover caused by urban expansion but as part of the urban economy, society and environment. Basically, it consists of two levels; farming and gardening, resulting in three main categories: urban food gardening, urban farming and non-urban oriented farming.

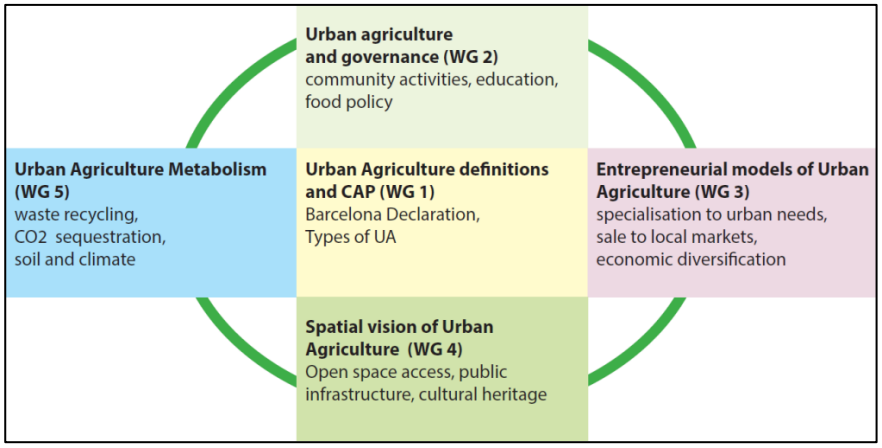


Figure 1: Working Group constellation of EU COST-Action "Urban Agriculture Europe" (Source: EU COST-Action Urban Agriculture Europe)

Urban Agriculture ranges from intra- to peri-urban settings including the urban fringe of cities and greater metropolitan areas. Urban agriculture is not seen as a rural leftover but as a result of on-going interaction between the urban and the agriculture sphere. Adaptation strategies towards the urban economy, society and environment are important to maintain viable. Generally, urban agriculture can be divided in the farming and gardening level resulting in three major categories: urban food gardening, urban farming and non-urban oriented farming (s. table 2). Bottom-up and top down Urban Food Gardening initiatives and projects strongly emerged in the previous years and exist all over Europe. Family Gardens and Allotment Gardens are primarily based on individual production, while educational, therapeutical, community and squatter gardens are mainly based on shared communities. Economy is of no or rather low importance for the first head category Urban Food Gardening, while other aspects, like integration, inclusion, joint gardening, reclaiming the commons, etc., are more relevant.

Table 2: WG 1 typology of urban agriculture

Head categories	Urban Food Gardening	Urban Farming	Non-urban oriented farming
Sub-categories	Family Gardens	Local Food Farms	
	Allotment Gardens	Leisure Farms	
	Educational Gardens	Educational Farms	
	Therapeutic Gardens	Social Farms	
	Community Gardens	Therapeutical Farms	
	Squatter Gardens	Agri-Environmental Farms	
		Cultural heritage Farms	
		Experimental Farms	

Urban Farming embraces commercially oriented agriculture and horticulture, which adapt their business to the urban environment. Initially, in many cases these farms turned to be urban because of urban growth. Urban Farming takes advantage of the proximity to a huge consumer market by producing and marketing food as well as providing services oriented towards the city or agglomeration. This category includes diversification and multifunctionality as well as specialization strategies to maintain profitable and use the urban surroundings and influences as advantages.

The third head category, non-urban oriented farming, contains commercial farms situated in urban locations, but on those which have not adjusted their business to the urban setting. Urban growth transferred these farms and the associated farmland from rural to (peri-) urban, but the farm business itself has basically remained rural. Production is oriented towards national or international markets, while the local and regional urban market is of no or minor relevance.

Working Group 3 "Entrepreneurial models of urban agriculture" developed and tested a standardized questionnaire for the collection of case studies all over Europe. In 2013 and 2014 about 80 case studies were collected in ten partner countries. As most of the cases were collected so far in Italy and Germany, the integration of the cases from these two countries seems to be most appropriate to develop a classification of entrepreneurial models. Additional case studies from these ten but also other countries are likely to be available soon, too. The contributions of WG 3 are important for the COST-Action to visualize the diversity of economic profitable models of urban agriculture, their success factors and innovative strategies of developing and adjusting businesses as well as their societal benefits. The information collected with the aid of the standardized questionnaire includes quantitative and qualitative data, which are:

- Background and basic information of the farm or project
- Purpose of the activity (commercial, self-consumption, subsistence, educational, environment protection, area management, social, leisure/well-being, tradition, R & D)
- Geographical situation (e. g. landscape, agro-ecology, urban surrounding)
- Markets & Marketing (e. g. offer, marketing channels, unique selling proposition)
- Institutional environment (e. g. public support and limitation, ownership)
- Success factors
- Problems
- Wishes to policy
- Societal benefits

The analyses of conducted interviews with the aid of the standardized questionnaire were done in the respective partner countries by using Canvas Business Model (CBM) for the entrepreneurial model and by using spider-web for the societal benefits. For some cases these analyses still have to be done. Within this STSM the focus is strongly on entrepreneurial models. CBM is a strategic management template, which is described in detail in the self-declared handbook for visionaries, game changes and challengers "Business Model Generation" by Osterwalder and Pigneur. Business Models in general explain "how value is created

for the customers and how value is captured for the company and its stakeholders" (Henriksen, Bjerre, Almasi, Damgaard-Grann, 2012: 31). The nine building blocks of CBM focus on customers, offer, infrastructure, and financial viability (s. figure 2). The nine building blocks are suitable to emphasize key success factors, detect barriers and problems, to compare competitors and also to generate new business ideas. WG 3 agreed on working with this CBM as it was already used to analyze case studies of urban agriculture – including urban farming, but also urban food gardening – e. g. in the Netherlands, the U.S., Vietnam and Latin America.

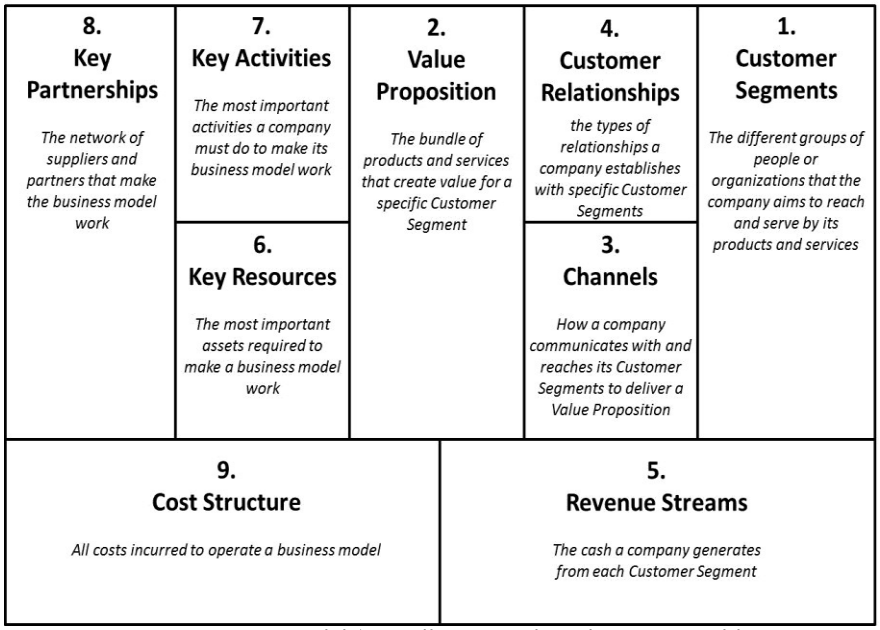


Figure 2: Canvas Business Model (own illustration based on Osterwalder & Pigneur, 2010)

The investigation of case studies with this Canvas Business Model aims to lead to a valuable comparative analysis of this Europe-wide empiric study carried out by WG 3. The comparative analysis is the main task of WG 3 for the remaining time of the COST-Action concluding with a catalogue of entrepreneurial models.

More detailed information about the Canvas Business Model and Spider-web provided by Bernd Pölling and Wolf Lorleberg are available in the Wiki of the EU COST-Action's website: http://www.urbanagricultureeurope.la.rwth-aachen.de/wiki.html (Working Group 3 --> "Working Paper – Methodology Canvas Business Model and Cobweb Diagram").

Contributions of the STSM

Methodology

The already existing and above briefly presented background of the COST-Action "Urban Agriculture Europe" – especially the contributions of WG 1 and WG 3 – are building the starting point for this Short Term Scientific Mission in Perugia. The investigation of existing Italian and German case studies offer the possibility to result in a draft classification of urban agriculture's entrepreneurial models in Europe. This draft classification, which is building the main output of the STSM, is supposed to be further adjusted and improved by integrating additional European case studies within the remaining time of the COST-Action.

The step by step key contributions of the STSM are (s. figure 3):

- Overview of previously collected Italian and German case studies following the developed and previously tested standardized questionnaire of WG 3
- Definition of the case study's major and secondary (+ tertiary) types considering the existing typology of WG 1
- Classification of entrepreneurial models
    - General description based on major and sub types per country (tables)
    - Manual cluster building of Italian and German cases per country
    - Comparison of Italian and German cases (similarities, differences)
    - Addition of good Italian and German cases of specific cluster

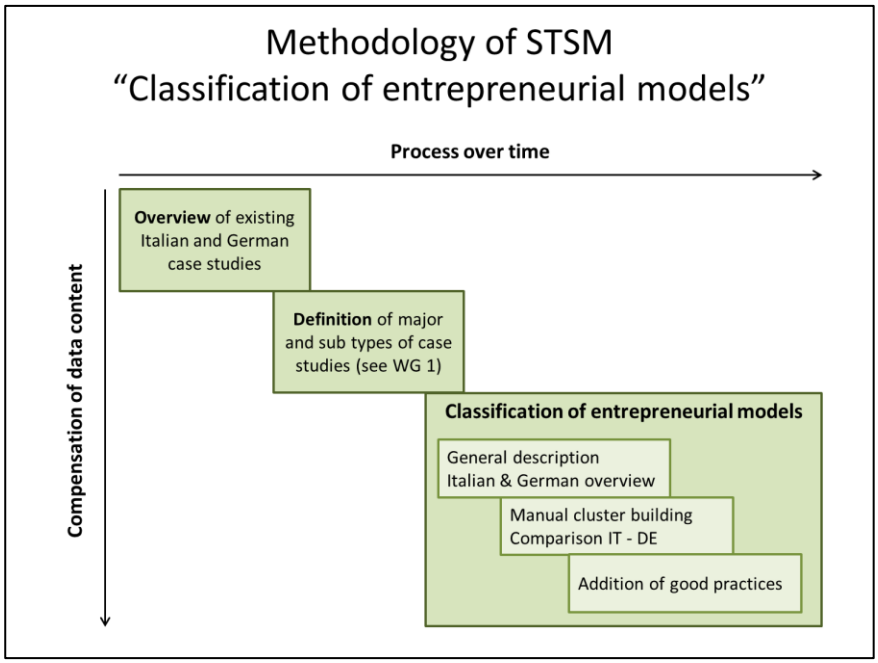


Figure 3: Methodological overview of STSM

Results

Overview of Italian and German case studies

The work of the STSM is based on in total 21 Italian and 24 German case studies. These cases were already interviewed and partly also analyzed by Canvas Business Model (s. above). Especially the Value Proposition, Revenue Streams and Key Activities of the CBM are suitable to group the case studies to a specific type of WG 1 typology. The overview of the Italian and German cases reveals that the in total 45 cases cover many of the possible types offered by the typology of Working Group 1 (s. table 3).

Table 3: General overview of existing Italian and German case studies based on typology of WG 1

Overview of existing Italian and German case studies based on typology of WG 1																			
Primary types WG 1 - Country	Urban Farming									Non-urban oriented farming	Urban Food Gardening							Others	Sum
	Local Food Farms	Leisure Farms	Educational Farms	Social Farms	Therapeutic Farms	Agri-Environmental Farms	Cultural heritage Farms	Experimental Farms	Others		Family Gardens	Allotment Gardens	Educational Gardens	Therapeutic Gardens	Community Gardens	Squatter Gardens	Others		
Italy	7		1	4		1		1		-	1	2	2	1			1	-	21
	14									-	7							-	
Germany	12	2	1	5				1	1	-					2			-	24
	22									-	2							-	
Italy + Germany	19	2	2	9		1		2	1	-	1	2	2	1	2		1	-	45
	36									-	9							-	

36 of the in total 45 cases belong to the head category urban farming, while the remaining nine cases are urban food gardening ones. This focus on urban farming is helpful to result in a classification of entrepreneurial models focusing on economic aspects. Urban Farming embraces commercially oriented agriculture and horticulture, which adapt their business to the urban environment. Farms belonging to this category include diversification and multifunctionality as well as specialization strategies to maintain profitable and focus on using the urban surrounding and influence as a business advantage.

The Italian and German cases include seven of the nine sub-categories of urban farming. 19 cases are local food farms; 12 German and seven Italian ones. Social farms are the second most investigated Italian and German cases. Five German and four Italian social farms offer a good information background in this interesting field. Furthermore two leisure, two educational, one agri-environmental and two experimental urban farms enlarge the heterogeneity of present cases from Italy and Germany, but the focus is on local food farms as well as social farms. Furthermore, one German urban farm does not fit into the WG 1 typology as this one cultivates ornamental plants but no food for the local market. The nine urban food gardening cases, whereof seven are from Italy and two from Germany, are in terms of the primary activity fairly distributed to the sub-categories. In the two countries under investigation two allotment, two educational and also two community gardens were investigated plus one family, one therapeutical and also one cultural heritage garden. Cultural heritage gardens are not offered in the typology as an individual sub-category and therefore added to not further specified other urban food gardening.

Classification of manual clusters

The overview of table 3 puts emphasize only on the primary activity. Thus, important information can get lost, for example in terms of the two missing urban farming sub-categories therapeutic and cultural heritage farms (s. table 3). These two aspects of therapeutic work and cultural heritage are both in no case the key activity aspect (criteria for grouping individual cases following WG 1 typology), but appear as minor aspects for some of the Italian and German cases (s. later). **More detailed case by case discussions of Italian and German examples during this STSM have detected that the multifunctionality, complexity and partly also uniqueness of specific case studies including their individual entrepreneurial models can often not be summarized by one specific type of WG 1 typology.** Nonetheless, WG 1 typology offers a suitable tool to result in a first overview of the cases as presented in table 3. Therefore, we agreed on incorporating secondary or minor aspects of the case studies for more precise information to classify entrepreneurial models within this STSM's work. This idea of incorporating also additional secondary or minor aspects of the existing case studies seems to be suitable to focus on the most relevant aspects, but parallel not losing to much information for classification purposes. Furthermore, it is still possible to use the typology developed and set by WG 1. In some cases it is not possible to easily define major and secondary activities, because more than one activity is of high importance to run the farm and could be seen as major activity.

Keeping this in mind, the incorporation of secondary activities to the classification is not limiting the decision making to one activity per case. Urban agriculture is characterized by its multifunctionality, which makes the definition and selection of only one activity problematic. An overview of only one major activity per case study is simplifying the complexity of entrepreneurial models too much. The definition not only of the major but also of relevant sub (secondary) types of the case studies is an outcome of the first overview of existing Italian and German case studies (s. table 1 & figure 3). Like for the major activities and aspects, the Canvas Business Model – especially Value Propositions, Revenue Streams and Key Activities – helps also to detect the case studies' activities and aspects of secondary or minor importance.

The case studies from Italy and Germany, but also from the other COST-Action partner countries are able to be classified by using a table scheme considering major and secondary types following WG 1 typology (s. table 4). As mentioned beforehand the types of major and also of secondary relevance are able to be extracted by using Canvas Business Model, especially the building blocks Value Propositions, Revenue Streams and Key Activities. The horizontal line sets the major WG 1 type, while the vertical columns represent secondary types. This approach for classifying the heterogeneous case studies offers the opportunity to consider not only two, but up to three types. While a colored circle defines the major and secondary types, the addition of a line attached to the circles visualizes the third type (s. figure 4). This option is especially suitable when thinking of the diversity and multifunctionality of urban agriculture; not only in an aggregated way, but also on the individual farm level.

Table 4: Table scheme for classifying entrepreneurial models

Secondary WG 1 type \ Major WG 1 type	Urban Farming									Non-urban oriented farming	Urban Food Gardening							Others
	Local Food Farms	Leisure Farms	Educational Farms	Social Farms	Therapeutic Farms	Agri-Environmental Farms	Cultural heritage Farms	Experimental Farms	Others		Family Gardens	Allotment Gardens	Educational Gardens	Therapeutic Gardens	Community Gardens	Squatter Gardens	Others	
No subtype																		
Urban Farming: Local Food Farms	■																	
Urban Farming: Leisure Farms		■																
Urban Farming: Educational Farms			■															
Urban Farming: Social Farms				■														
Urban Farming: Therapeutic Farms					■													
Urban Farming: Agri-Environmental Farms						■												
Urban Farming: Cultural heritage Farms							■											
Urban Farming: Experimental Farms								■										
Urban Farming: Others									■									
Non-urban oriented farming										■								
Urban Food Gardening: Family Gardens											■							
Urban Food Gardening: Allotment Gardens												■						
Urban Food Gardening: Educational Gardens													■					
Urban Food Gardening: Therapeutic Gardens														■				
Urban Food Gardening: Community Gardens															■			
Urban Food Gardening: Squatter Gardens																■		
Urban Food Gardening: Others																	■	
Others																		■

Following this approach the available 21 Italian and 24 German case studies were homogeneously categorized with support of Canvas Business Model and classified into the easily usable scheme of table 4. Except from one local food farm, all Italian case studies have at least one secondary type (s. table 5). Four cases, which are all urban farms, are added with a third characteristic. Six of the 24 German cases are defined by exclusively one WG 1 type, while seven of the remaining case studies consist of three types (s. table 6). These overviewing tables of the Italian and German case studies visualize in a summarizing way the importance of integrating secondary types to define and classify the diverse cases. While the cases from Italy include both urban farming and urban food gardening in reasonable quantities, the German cases strongly focus on urban farming plus only two community gardens covering the head category urban food gardening.

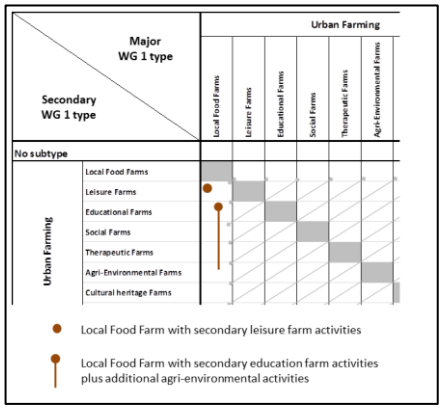


Figure 4: Example how to use the table scheme for additional secondary sub types of WG 1 typology

Table 5: Classification of Italian case studies

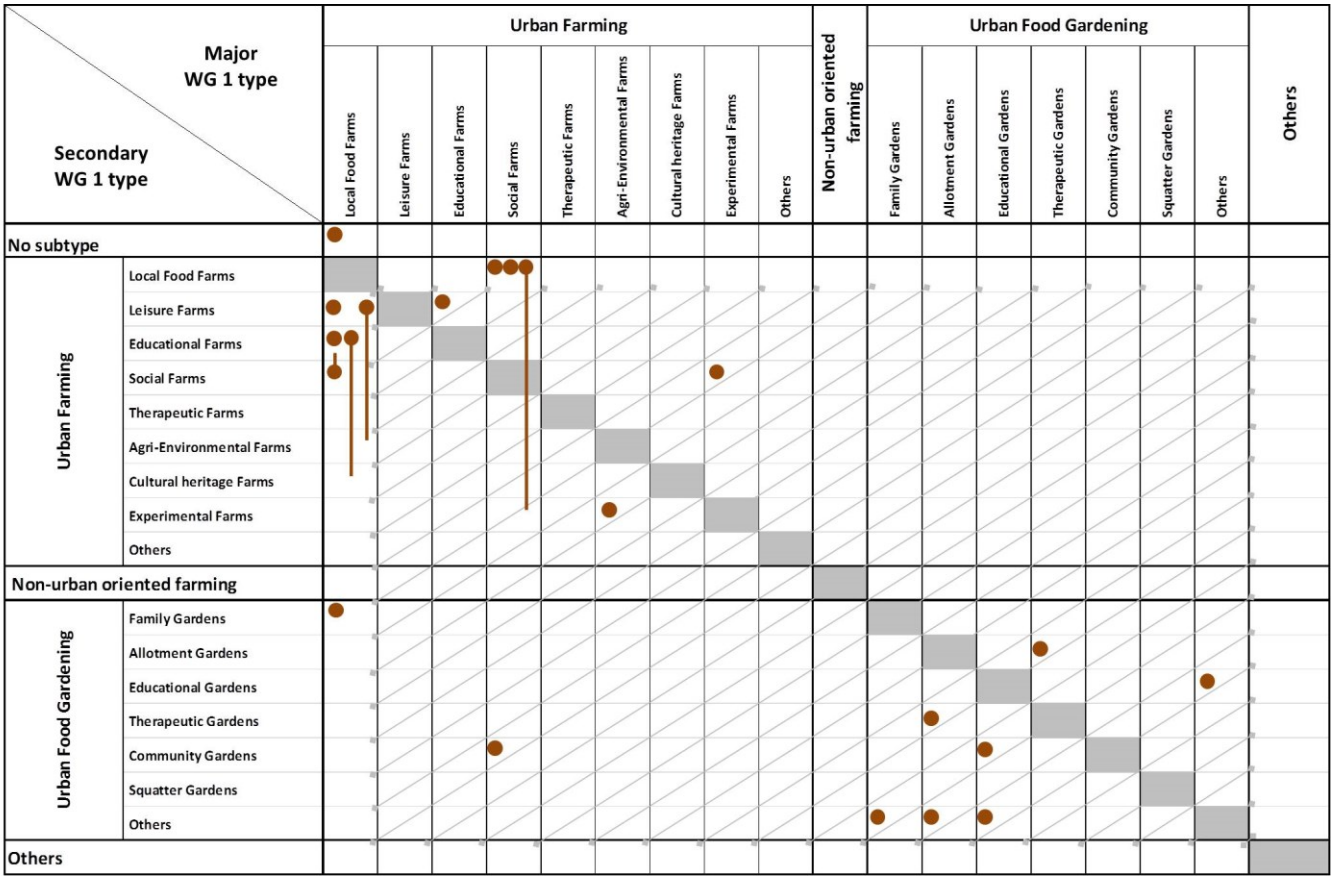
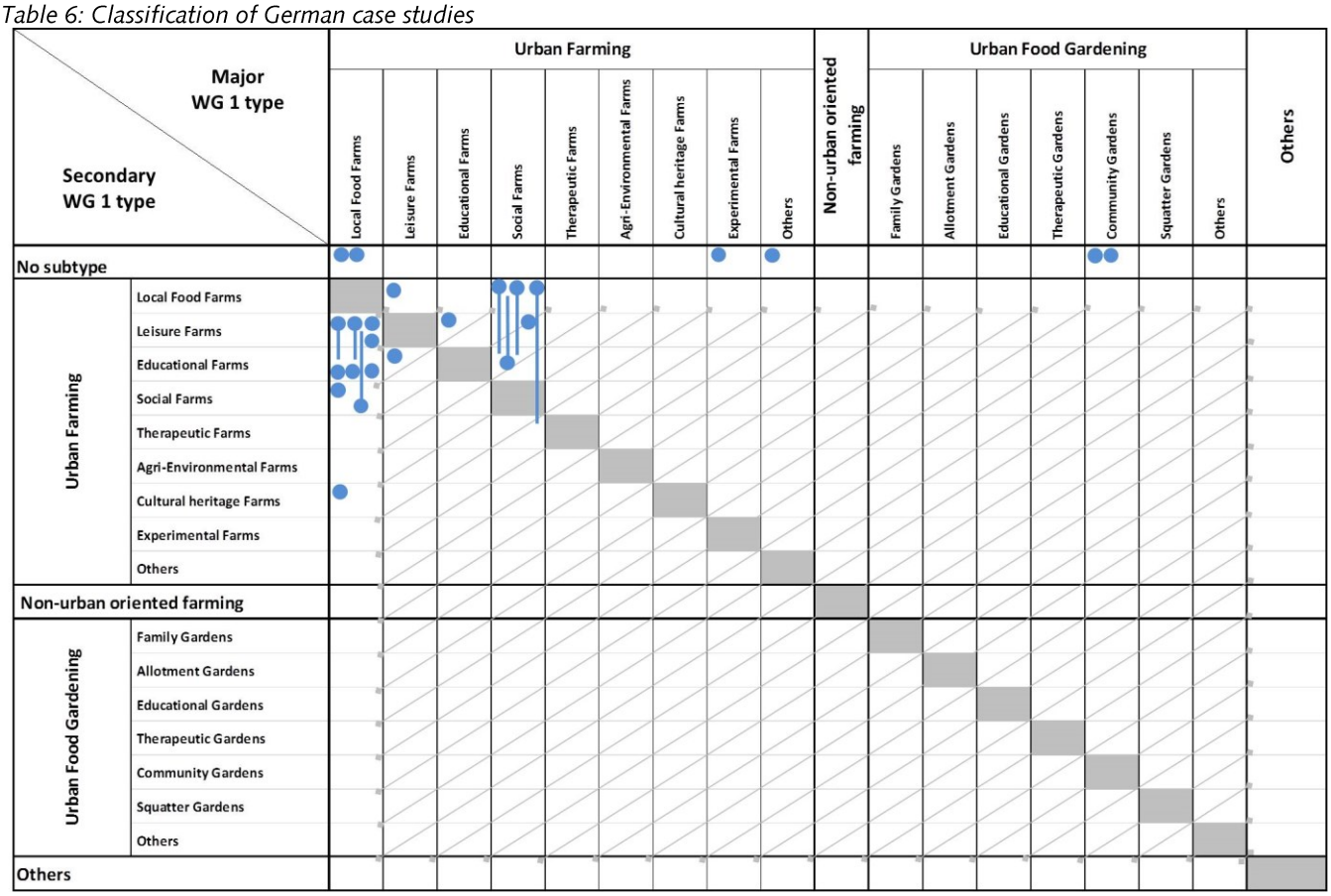
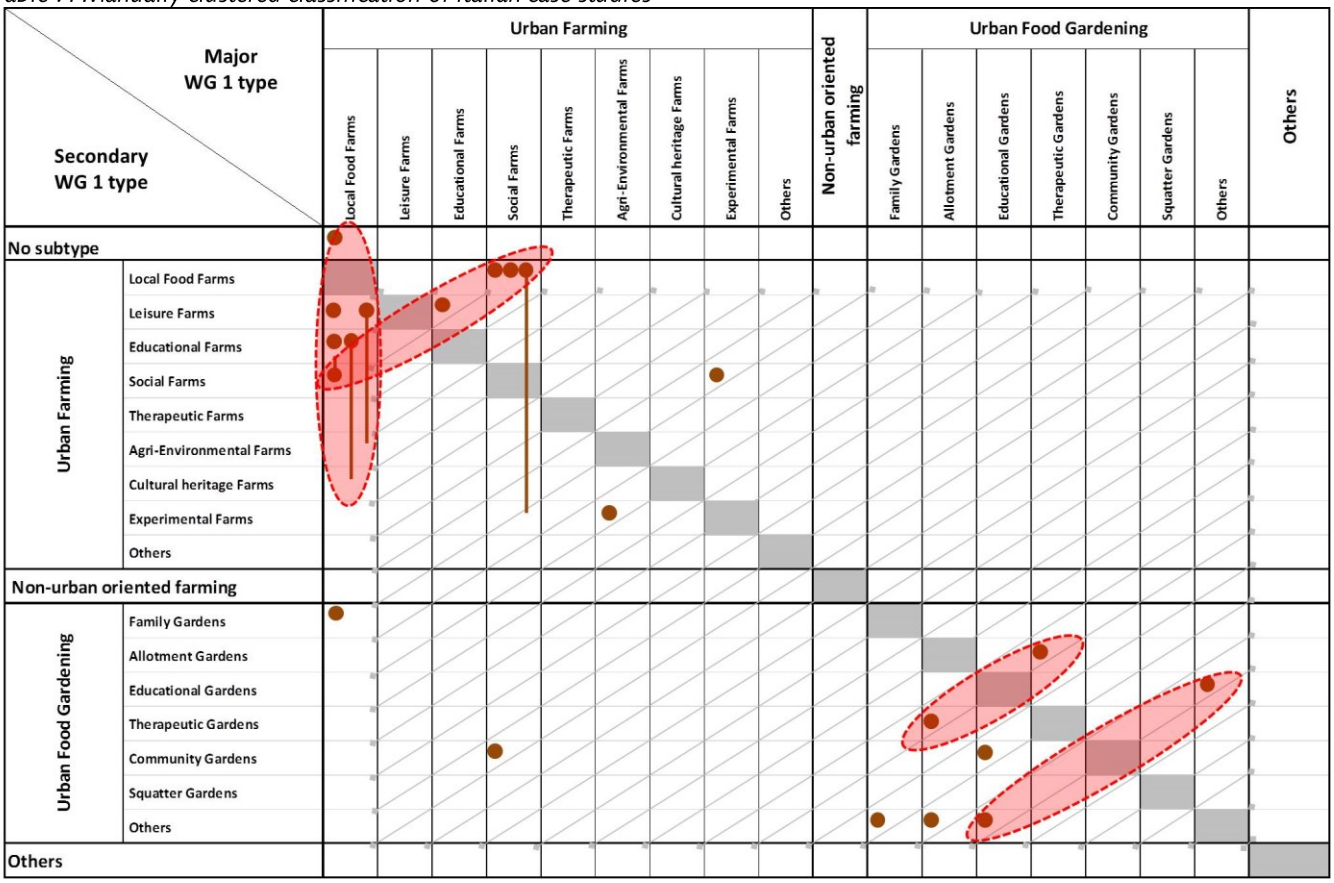


Table 6: Classification of German case studies



These two tables provide a suitable starting point to build clusters with similar characteristics within the two respective countries. Especially because of limited time resources we agreed on using a manual way to result in clusters of entrepreneurial models of urban agriculture. Firstly, we conducted this work with the Italian and German cases (s. table 7 and 8). Secondly, we also had a look to the remaining European cases available (s. table 9). In general the proposed scheme offers the possibility to easily build clusters focusing on not more than three aspects per case study.

Table 7: Manually clustered classification of Italian case studies



Due to the heterogeneity of Italian cases, four clusters have been identified; two in the field of urban farming and also two in the field of urban food gardening. Although economic aspects are often of no or just minor importance in the category urban food gardening some cases have already started some kind of business out of their activities. Therefore, these types of urban agriculture are included in this analysis focusing on classifying entrepreneurial models. One urban farming cluster includes the local food farms, which are the most existing ones in this survey. In total seven urban farms are defined as primarily local food farms, but the secondary types differ a lot. One local food farm has no subtype and another one integrates a family garden in its business (s. later).The secondary types of the remaining five cases are leisure, educational and social ones plus also in one case each agri-environmental and cultural heritage issues as third components. The analyzed local food farms from Italy lead to a diverse and multifunctional pattern.

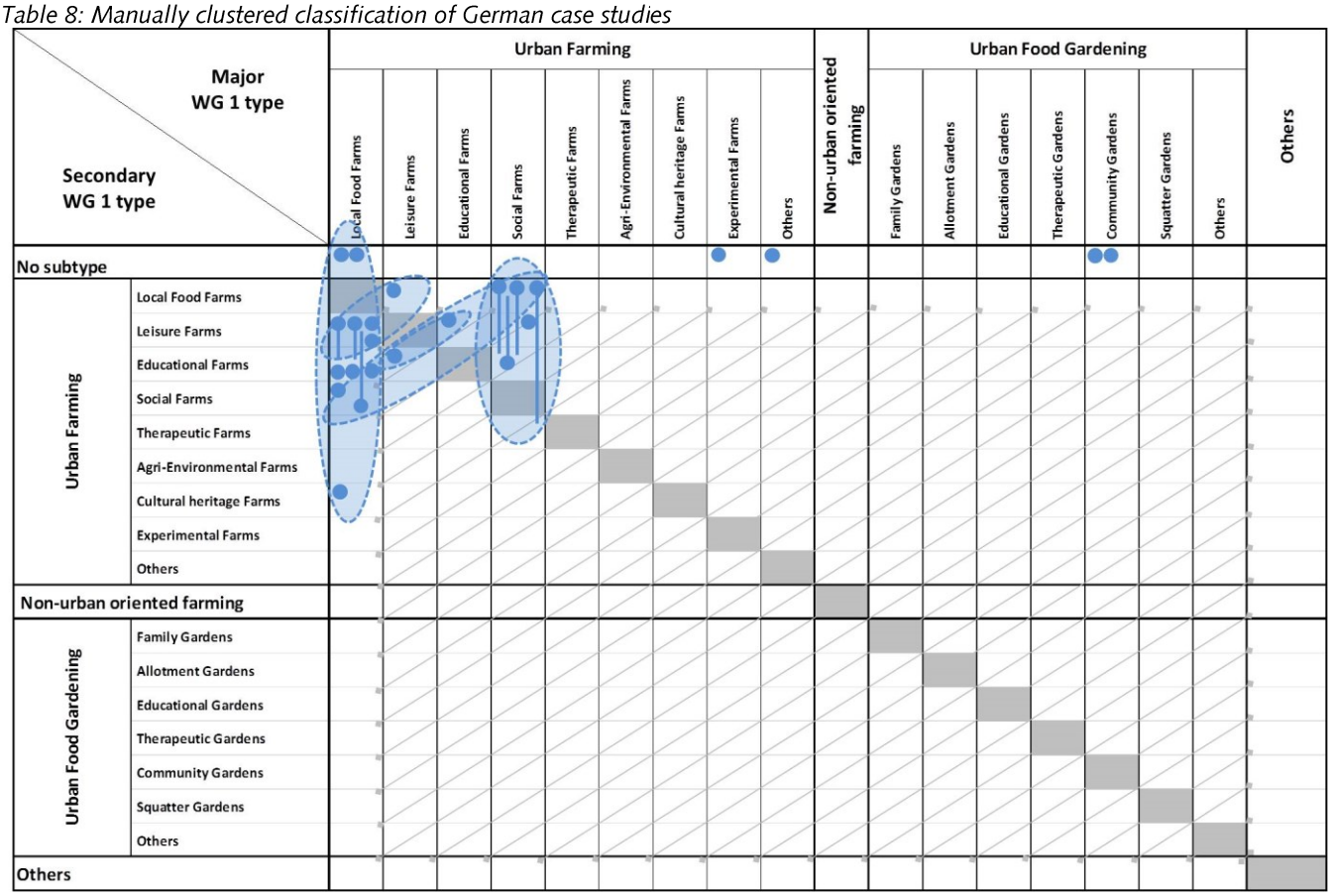
The second cluster combines local food and social farming. Three of the four investigated social farms in Italy connect social issues with some kind of direct marketing. One of these three farms integrates also experimental work. Furthermore, there is one Italian case, which is primarily focusing on local marketing of food but is also incorporating social work in its business. The huge majority of social farms conduct organic or even biodynamic production. Direct marketing of organic food is a frequently used channel of social farms to boost the revenue, which is often majorly dependent from public support. Additionally, it is quite worthwhile to mention here two urban farms, which integrate urban food gardening – family garden and community garden – in their business.

These two examples show again the diversity and multifunctionality, but also innovative power of urban agriculture. People engaged in urban agriculture step into emerging niches to adjust their activities to the urban demands and requirements.

In the field of urban food gardening two minor clusters can be set. One combines allotments and therapeutic issues, while the second one combines educational work with cultural heritage issues. As urban gardens emphasizing cultural heritage issues are not named as an individual type in the typology of WG 1, these cultural heritage gardens are classified here as other urban food gardening. In total four of the seven urban food gardening cases include the category "others"; in the previously mentioned two cases it is about cultural heritage. Therefore, it can probably be suitable to discuss about the WG 1 typology again after finalizing the catalogue of entrepreneurial models of urban agriculture of WG 3. The collected WG 3 case studies from Italy and beyond address many issues, which are so far not able to be all classified in the typology of WG 1.

By comparing the Italian and the German cases some similarities are visible. Parallel to Italy the local food farms analyzed in Germany – or more precisely in the federal state of North Rhine-Westphalia – are rather diverse and integrate leisure, educational, social and cultural heritage issues as secondary characteristics (s. table 8). Three of the local food farms even have an important third component visualized in the scheme. Four of the twelve German local food farms incorporate leisure activities and three of the twelve integrate educational activities as secondary types. The second manual cluster similar to the Italian cases is the combination of local food and social farming. Four of the five German social farms focus also on local food issues and furthermore there are two local food farms integrating social aspects as secondary aspects. Like in Italy all conducted social farms market certified organic products. Social work for disadvantaged people and organic production are two suitably connected purchasing criteria in most of the social farms.

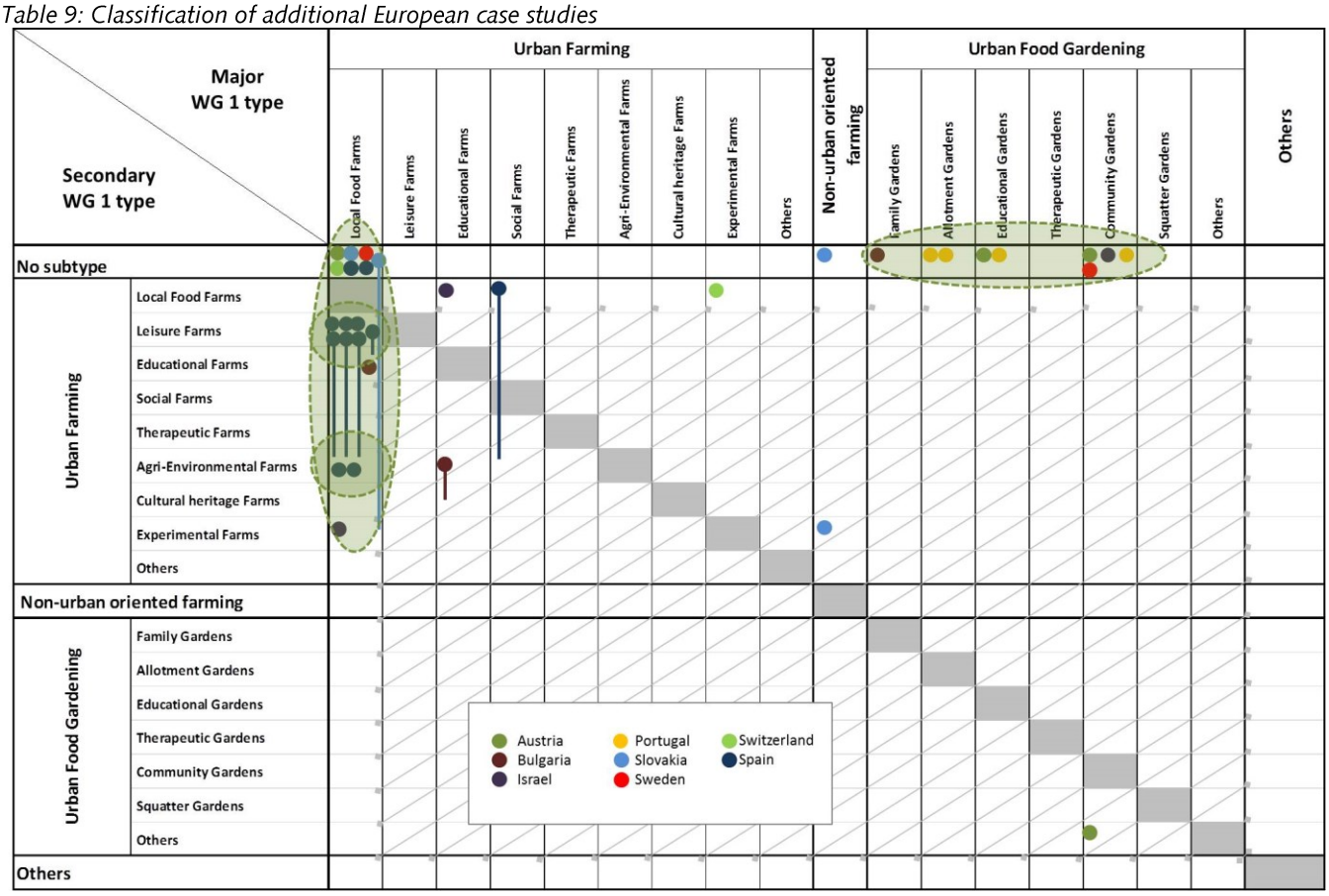
Table 8: Manually clustered classification of German case studies



Four of the five social farms can also be defined by a third component, which leads to the assumption that the social farms in Germany are very much diversified. Social work is not only suitably combined with local food marketing but also with leisure, educational and therapeutic goals. Clusters of rather minor importance within this analysis limited to 24 German cases combine leisure farms with either local food or educational business strategies. In both countries the two clusters of firstly the diverse local food farms and secondly the combination of local food and social work prevails.

In addition to Italy and Germany we also used the case studies from the other eight European countries Austria, Bulgaria, Israel, Portugal, Slovakia, Sweden, Switzerland and Spain. These 34 investigations excluding the Italian and German cases consist of 23 urban farms and eleven urban food gardening initiatives (s. table 9). Most of the cases are from Spain, which contributes with twelve urban farms. Four cases are each from Austria, Portugal and Slovakia, three each from Bulgaria and Israel and two each from Sweden and Switzerland. Most of the interviewed urban farms are major local food farms. Some of these farms incorporate additional strategies in their business plan, more precisely leisure, education, agri-environmental and experiment activities. The local food farms are already of high relevance for the Italian and German case collections, which underlines the importance of local direct – here urban and peri-urban – marketing in urban agriculture. Furthermore, the additional European cases include a variety of urban food gardening, especially community gardens, allotment and educational gardens.

Table 9: Classification of additional European case studies



The conducted study of Italian and German cases considers 45 cases, whereof 21 are from Italy and 24 are from Germany. 36 of these cases are defined as urban farms, while the remaining nine are urban food gardening cases. Most of the analyzed farms belong to the WG 1 typology local food farm (19) and social farm (9) (s. table 3). As urban agriculture is characterized by diverse and multifunctional characteristics, we decided to integrate secondary types of WG 1 for not focusing only on one item per case study. The consideration of secondary types (s. tables 4, 5 and 6) was accompanied by a manual cluster building process (s. tables 7, 8 and 9) for the Italian, German and additional European cases.

The most evident clusters are diversified local food farms as well as the combination of social work and local food production and marketing. Furthermore, this analysis reveals some other clusters of rather minor importance.

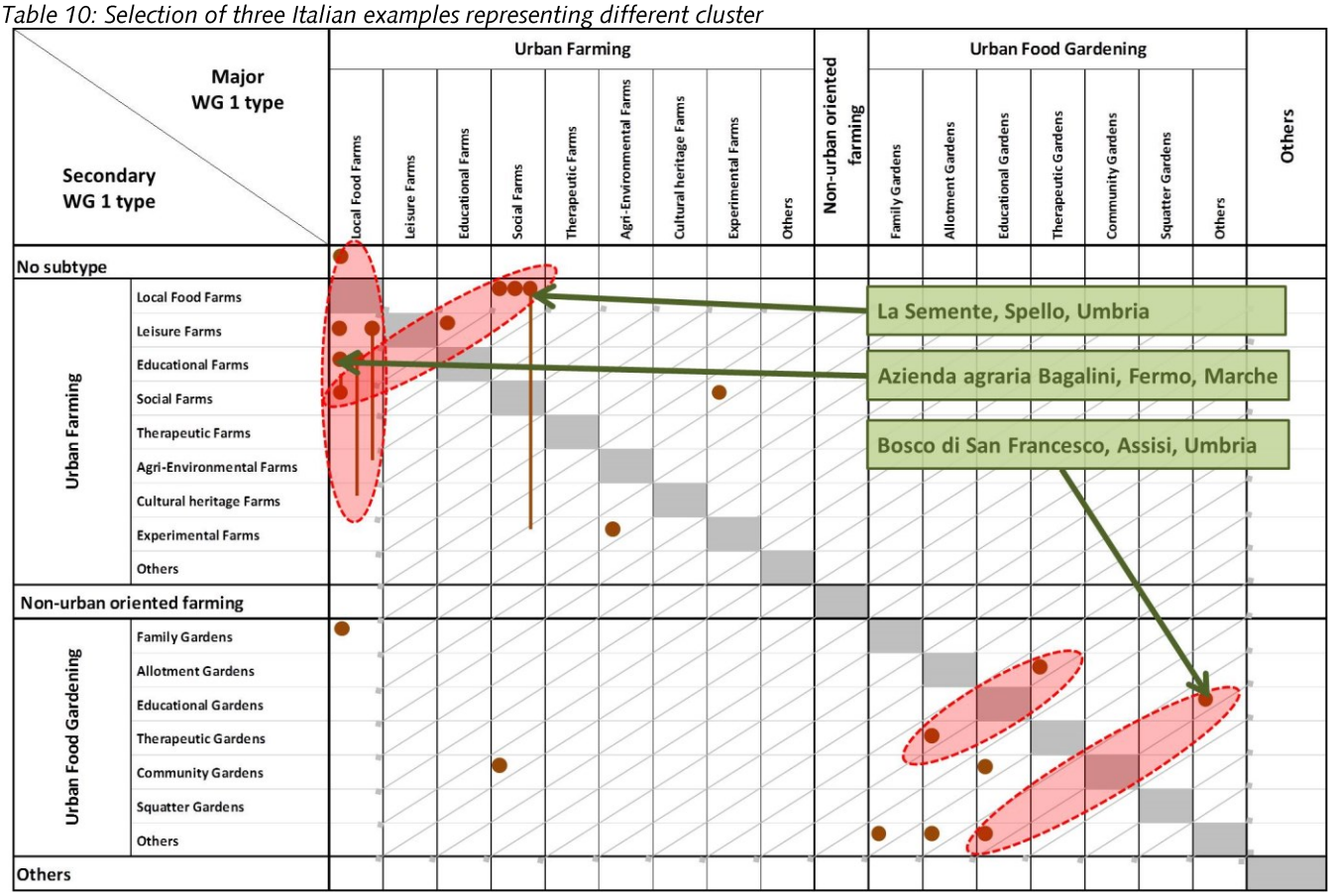
- **Diversified Local Food Farms**
  Many primary local food farms integrate additional activities into their business strategy. Direct marketing, which is mainly carried out via farm shops, sale booths, farmers' markets, and delivery services of food boxes to customers, is combined with many different other types of activities. In this study most often combinations are with leisure, education and social businesses, but also by integrating agri-environmental, therapeutic, cultural heritage, experimental, and other no further specified value propositions to customers.

- **Social & Local**
  The second cluster of urban farms combines social farm activities with local food provision. Social farming is a diversification strategy of farms to maintain profitable on the one hand and to offer professional support for disadvantaged people. It is very common to connect social farming with direct marketing concepts, because customers are willing to support the social work by buying food and other goods from social farms. Furthermore, it is common to run the farm organically.

Examples

Out of the list of in total 21 Italian and 24 German case studies, which were considered for investigations within this STSM, five cases are used to represent and demonstrate characteristics of the manually created clusters. Three cases are from Italy and two are from Germany, whereof four belong to the two major clusters "diversified local food farm" and "social and local" (s. before). Two urban farms and one urban food gardening case study from Italy, which are all three located in peri-urban environments, were selected (s. table 10). One represents the cluster "social & local", one the "diversified local food farms" and the third one is the urban food gardening case connecting cultural heritage and education activities.

Table 10: Selection of three Italian examples representing different cluster



Cooperativa Sociale La Semente, Spello, Umbria

The farm Cooperativa Sociale La Semente located in Spello (Umbria) between Perugia and Foligno at the rather densely populated foot of the Apennine mountain range represents the cluster of farms, which combine social work with local food production and marketing (s. before). The farm offers care taking for about twelve autistic people and cultivates about three hectares of farmland organically including vegetable production, mainly salad, chicken (eggs) and alpacas (s. figure 5). La Semente suitably represents the cluster of "social & local" urban farms. The farm is mainly re-financed by public money and furthermore sells food boxes. Due to the care taking for autistic people as well as the vegetable production and marketing, La Semente offers quite many jobs: Nine social workers, agricultural experts plus administration and management workers are engaged on the farm, which is currently renovating a building to start with agri-tourism services soon. The agri-tourism accommodation is mainly supposed to be offered to the families of the autistic people, but also to other people interested in the farm activities, their products and the landscape.

Key Partnerships	Key Activities	Value Proposition	Customer Relationships	Customer Segments
• Families of the autistic people • Public authorities • University of Perugia (Department for Agricultural, Food and Environmental Science)	• Care taking for autistic people • Organic farming • Direct marketing (food boxes) • Guided farm tours for interested groups • Asking for funding (public relations, etc.) **Key Resources** • Autistic people • Workers (social workers, agri-experts, administration, etc.) • Nicely designed house for care taking • 3 ha of farmland Chicken, alpacas	• High-quality care taking for autistic people (ca. 12 persons) • Organic farming of vegetables (salad), chicken (eggs), alpacas, etc. • Food box delivery • Farm visits • In future: agri-tourism	• Individual contact to autistic people • Personal contact to customers of food boxes **Channels** • Families of autistic people • Public authorities • Food direct marketing	• Autistic people • People interested in organic food from a social farm located within the region • People interested in this type of farm • In future: for people interested to stay on a social farming (for holidays, for volunteering, etc.)

Cost Structure	Revenue Streams
• Salary for workers (9 social workers, agricultural experts, administration/management/public relation, etc.) • Cultivation of vegetables • Keeping of chicken and alpacas • Maintaining the property, mainly the buildings • Materials for social work	• Re-financed by public authorities • Selling food boxes by delivery service

Figure 5: Canvas Business Model of Cooperativa Sociale La Semente

Photos 4-8: Impressions of Cooperativa Sociale La Semente

Photos 9-13: Impressions of Azienda Agricola Bagalini (Source: www.aziendaagricolabagalini.it)

Azienda Agricola Bagalini, Fermo, Marche

Azienda Agricola Bagalini is a diversified farm in the peri-urban environment of Fermo, Marche region, and the chosen Italian representative of the "diversified local food farm" cluster. The 50 ha farm combines the agricultural production, which is the farm's main income source, with social – here educational – and recreational services. The agricultural business is based on crop production, keeping cattle and direct marketing of food products; most important are vegetables, olive trees and 100 cattle for meat production and marketing (s. figure 6).

Furthermore, the farm takes care of young children, especially in the age range of one to three, but also older kids up to the age of ten. Day by day education offers in form of a "kindergarten farm" for the youngest age range from one to three is accompanied by additional education services, like holiday programs (camps) for kids as well as cooking, painting courses, etc. for both adults and children. In total eight workers are active on the farm: two family workers, four qualified workers for agricultural production, marketing and additional services as well as two kindergarten teacher.

Key Partnerships	Key Activities	Value Proposition	Customer Relationships	Customer Segments
• Marche Region, Department of Agriculture • Professional agricultural association • Families	• Keeping cattle and selling the meat • Education services (Kindergarten farm, additional education services) • Food taste offer • Olive oil production and marketing **Key Resources** • 8 workers (2 family workers, 4 qualified workers in agriculture, 2 kindergarten teacher) • 50 ha farmland • Cattle • Property, equipment and machinery	• Production, processing and marketing of food (vegetables, olive oil, cattle meat) • Running a "kindergarten farm" for kids from 1-3 years • Education services for kids from 4-10 years • Additional services, like cooking, painting, holiday farm camps, etc.	• Personal contact to all customers • For education services also individual relationships **Channels** • Direct marketing • Public authorities • Families of the kids	• Customers tasting and buying regional food • Kids of age 1-3 • Kids of age 4-10 • People interested in specific farm services (cooking, painting)
Cost Structure			**Revenue Streams**	
• Salary (4 agricultural workers, 2 kindergarten teacher) • Agricultural production and processing of food (olives, vegetables, cattle) • Management costs for kindergarten • Management costs for farm events, food tasting, etc. • Farm shop permanent costs			• Selling meat (direct marketing) • Education services for kids, mainly kindergarten • Subsidies (public payments) • Offering food tasting • Additional services • Selling olive oil (direct marketing)	

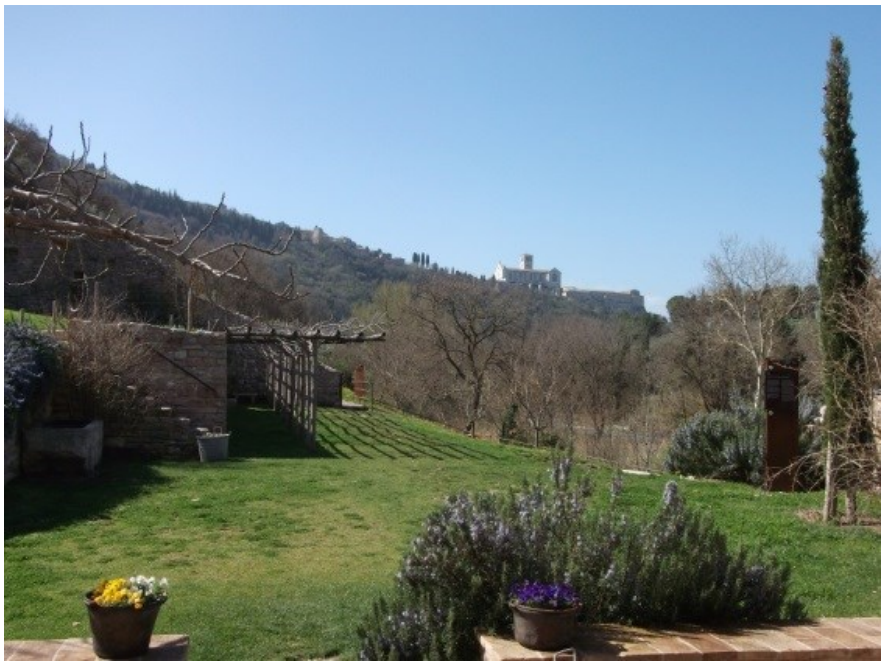
Figure 6: Canvas Business Model of Azienda Agricola Bagalini

Bosco di San Francesco, Assisi, Umbria

Bosco di San Francesco located in Assisi close to Perugia, Italy, is a 64 ha large peri-urban farm restoring and conserving traditional environment and landscape. This urban food gardening initiative combines education and cultural heritage purposes. The area is dominated by rather open woodland – which is name-giving for "bosco" – but also olive trees, meadows, and waterways result in an attractive cultural heritage landscape with high recreation values. About 240 olive trees are cultivated here imbedded in an aesthetic landscape. The restoration of the ancient property and cultivated land just downhill the famous basilica of Assisi was founded by FAI – the Italian Environmental Foundation – as well as private and public donations. The main goal of this foundation is the protection, restoration and maintenance of cultural landscapes, nature and art. Furthermore, FAI aims to set up economic viable places on the mid- and long-term. Therefore Bosco di San Francesco is currently at the point to integrate more and more businesses to obtain and increase income values (s. figure 7). This place is heavily visited by tourists, so that the peri-urban farm uses different sources to earn money; these are mainly entrance fees, guided tours, education courses, music and religious activities, donations, direct sell of self-produced organic olive oil as well as selling books and gifts referring to Assisi in a small shop at the main entrance zone to "Bosco di San Francesco".

<table>
<tr>
<td rowspan="2">Key Partnerships
FAI – Italian Environmental Foundation
People and institutions donating the farm
Municipality of Assisi</td>
<td>Key Activities
Maintaining cultural landscape (woodlands, olives, etc.) and buildings
Education and other services
Producing and marketing olive oil
Selling other goods</td>
<td rowspan="2">Value Proposition
Attractive recreation area in a high-value cultural landscape in touristic and religious Assisi
farming and direct sell of organic olive oil
Education courses, guided tours, additional events (music, religious, etc.)</td>
<td>Customer Relationships
Personal contact to customers who buy products/get services
Non-personal to some visitors exploring the area</td>
<td rowspan="2">Customer Segments
Tourists exploring Assisi
People interested in maintaining cultural landscapes including some farming
People interested in food and non-food products from Assisi
People (adults and kids) willing to learn about cultural heritage, woodlands, farming, traditional landscapes</td>
</tr>
<tr>
<td>Key Resources
Renovated property
Attractive landscape , whereof 64 ha belong to Bosco di S. F.
Employees
Olive trees
Proximity to the famous basilica</td>
<td>Channels
Customer have to come to the area for visit and services
Direct marketing of organic olive oil and other offers
FAI</td>
</tr>
<tr>
<td colspan="2">Cost Structure
Maintaining the property and land, including woodlands, olive trees, recreation areas, paths, etc.
Salary for the workers
Running the shop and information center</td>
<td colspan="3">Revenue Streams
Restoration was funded by FAI and donations
Now starting to receive income from:
Entrance fees
Guided tours, education courses, events, etc.
Selling olive oil and other goods directly
donations</td>
</tr>
</table>

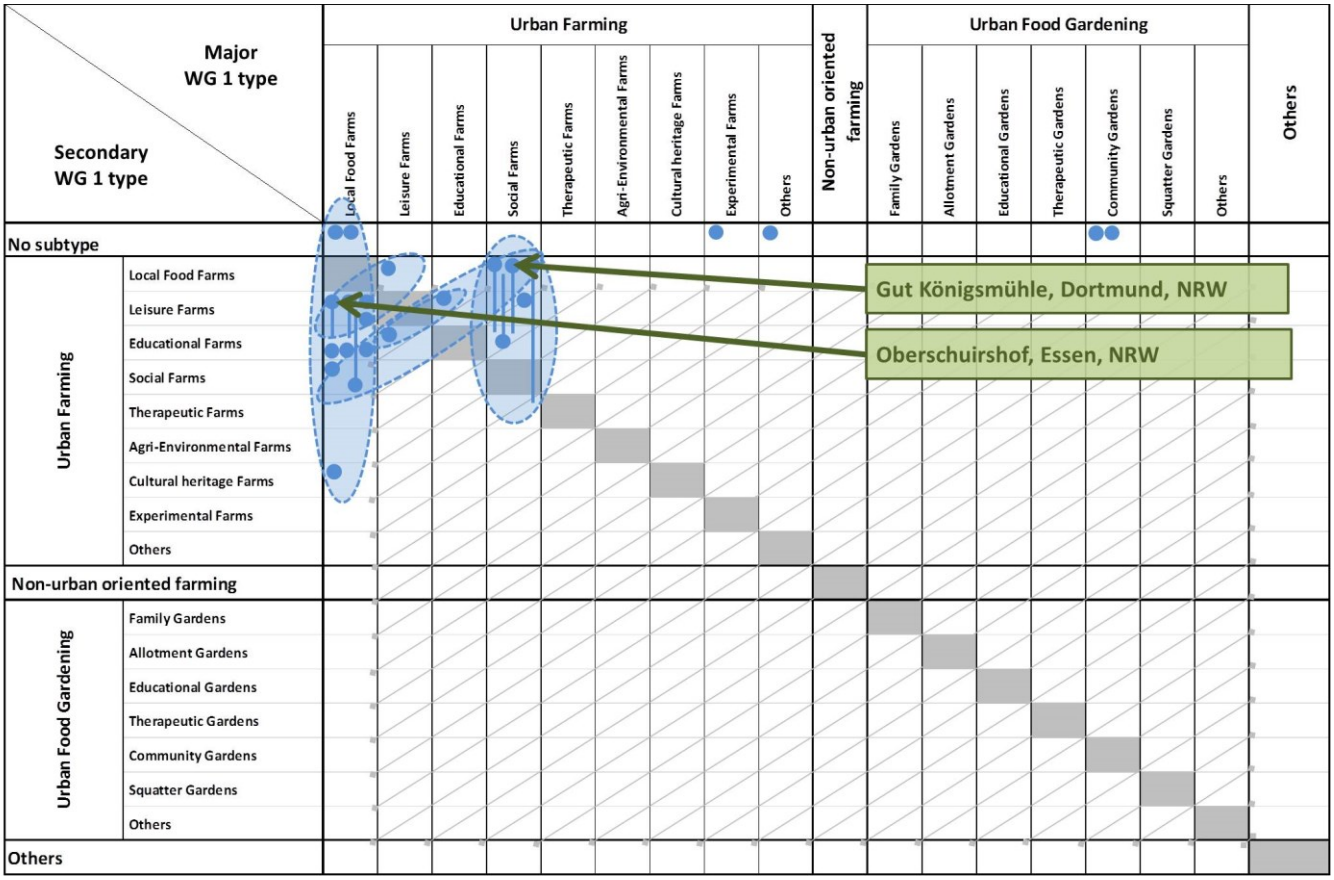
Figure 7: Canvas Business Model of Bosco di San Francesco



Photos 14-19: Impressions from Bosco di San Francesco

The two selected German examples belong to the two major clusters "diversified local food farm" and "social and local" (s. table 11). Oberschuirshof and Gut Königsmühle are both located in Germany's largest agglomeration Metropolis Ruhr in North Rhine-Westphalia. Metropolis Ruhr is a polycentric city net of more than five million inhabitants. The shape and appearance of this region changed tremendously within the last two centuries. In the 19th and early 20th century the region faced an enormous population growth and urbanization process, which accompanied the development to one of the globally leading coal and steel industry centers. Nowadays Ruhr Metropolis is under transformation towards a service oriented city region confronted with problems like population decrease, rather high unemployment rates, and heavily polluted soils due to the industrial history. Despite these essential changes Metropolis Ruhr remained comparable green including agriculture. Nearly 40 % of the whole metropolitan area and still about 25 % in the most densely populated core zone are still being farmland.

Table 11: Selection of two German examples representing the two major clusters involved in WG 3: "diversified local food farms" and "social & local"



Oberschuirshof, Essen, Metropolis Ruhr

Oberschuirshof , which is a long-established farm located in the city fringe of Essen, represents the cluster "diversified local food farm" as a German supplement to Azienda Agricola Bagalini, which is the Italian representative of this cluster. The German farm is producing a variety of food goods for the locals but also integrates marketable services related to agriculture in its business strategy (s. figure 8). Crop production focuses on potatoes, vegetables, fruits and cereals, while the farm keeps pig and poultry in an animal-friendly way. Many food products are sold directly in the farm shop and most of the potatoes are sold to local EDEKA supermarket stores to be sold to the consumers as regionally produced potatoes. Besides producing and marketing food, Oberschuirshof adjusted to the metropolitan area also by adding services related to agriculture, especially leisure and educational services for the population. One service, which has developed to a successful farm business niche, is to rent small plots for gardening purposes to city dwellers. Additionally to the rental fees, this concept brings also about 100 families to the farm property and links it to the farm shop, which is resulting in a successful win-win-situation. In general, in Germany this "rent-a-field"-concept emerged a couple of years ago and the number of farms involved is strongly increasing.

Key Partnerships	Key Activities	Value Proposition	Customer Relationships	Customer Segments
• EDEKA • Butcher • Regional Agricultural Association (RLV) • Owner of the leased farmland	• Producing, processing and marketing crops and livestock (focus on potatoes) • "Rent-a-field"-work (preparation, advertisement, etc.) • Public relations **Key Resources** • 75 ha of farmland • Livestock (pig, poultry) • Workers • Machinery/equipment (e. g. processing and packaging potatoes, etc.) • Location of the farm	• Crop production: focus on potatoes, vegetables, fruits • Livestock production: pig and poultry production (animal-friendly) • Direct/regional marketing • "Rent-a-field": seasonal rental of small parcels for gardening • Public relations: guided farm tours, historic tractors, …	• all relationships are personal: direct marketing, EDEKA, butcher, "rent-a-field", public relations **Channels** • Direct marketing • Supermarket EDEKA • Butcher • Feldfreunde.de ("Rent-a-field")	• Customers of regional food (potatoes, vegetables, fruits) • Customers who want to grow and harvest on their own • Children (kindergarten, school) and adults • Supermarket EDEKA

Cost Structure	Revenue Streams
• Production, processing and marketing of a huge variety of crops and livestock, especially processing/packaging of potatoes • Salary for workers • Leasing farmland (25 ha; ca. 1/3 of the farmland) • Machinery / equipment: maintaining and buying • Advertisement	• Direct marketing via farm shop • CAP-subsidies • selling potatoes to EDEKA • "rent-a-field" Feldfreunde.de

Figure 8: Canvas Business Model Oberschuirshof


Photos 20-27: Impressions from Oberschuirshof

Gut Königsmühle

Farm "Gut Königsmühle" is located in the northwest of half-million inhabitant city Dortmund – also part of Metropolis Ruhr – and combines social farming with local food farming and education services (s. figure 9). This farm is the German counterpart to Cooperativa Sociale La Semente being the Italian representative of the second major cluster "social & local". The social farm enterprise, which has started in 2006 at the property of a former privately run farm, cultivates nine hectares of farmland. The conducted agricultural production is certified organic following Demeter, which is highlighting bio-dynamic process flows. Plant production is focusing on horticulture embracing plastic film greenhouses and open fields for vegetables and herbs including cabbages, tomatoes, paprika, cucumbers and rhubarb. Five hectares are compensation areas highlighting landscape and environmental goals. Furthermore the farm keeps colonies of bees and ewes of the old and robust German sheep landrace "Rhönschafe", which is threatened by extinction. Apart from this diverse food production, Gut Königsmühle focuses primarily on social and educational services. The farm is run by the social umbrella organization "Pädagogisch Soziales Zentrum Dortmund e.V." (PSZD). The activities are mainly financed by public funds. The core business is to offer living and working places for disadvantaged people. This farm place offers 14 housing and living places for disabled people. About 20 disabled people are working in horticulture including green keeping and landscape architecture. For children with problematic family backgrounds Gut Königsmühle offers adjusted social education after regular school in the afternoons. The same organization is also responsible for a farm café and community center being open at the weekends. Furthermore a kindergarten emphasizing Rudolf Steiner ("Waldorf education") is running with some 25 kids. Gut Königsmühle is also planning to build up a manufacture plant for paper and printing products offering job opportunities for 80 disabled people.


Key Partnerships	Key Activities	Value Proposition	Customer Relationships	Customer Segments
• Landschaftsverband (Regional Landscape Association) • Head- and sub-organizations of PSZD • Demeter • Nearby organic (farm) shops	• Support handicapped people (housing, jobs) • Education for kids • Organic horticulture: producing, processing, marketing • Green keeping / landscape measures • Café	• Housing and jobs for handicapped people: living and working in horticulture, green keeping, landscaping, and service • Organic Horticulture: vegetable and herb production (Demeter), processing and marketing • Green keeping/ landscaping: taking care of compensation areas • Café	• all relationships are personal: to handicapped people, children, visitors, customers, administration, …	• Handicapped people • Children facing problems in their families and their neighborhoods • Young children from Kindergarten • People from the neighborhoods
	Key Resources • High qualified social and education workers • Farm property (buildings and land) • Handicapped people • Machinery/equipment • Funding		**Channels** • Head organization PSZD + sub-organizations • Administrative bodies • Nearby organic farm shops • Advertisement: internet, etc.	

Cost Structure	Revenue Streams
• Salary for qualified workers (social and education, gardening, service and organization/management jobs) • Production, processing and marketing facilities for Demeter organic horticulture • Maintaining buildings • Leasing farmland (5 ha)	• Public funding (Landschaftsverband, …) • Selling demeter vegetables and herbs via the own farm shop as well as via nearby organic (farm) shops • Sheep meat and wool • Farm café • EU CAP (little relevance)

Figure 9: Canvas Business Model Gut Königsmühle

Photos 28-33: Impressions from Gut Königsmühle (Photographer: Wolf Lorleberg)

Outlook

Within this STSM the classification of entrepreneurial models of urban agriculture was done by conducting a manual cluster building process. This cluster approach considers the typology of WG 1 with a special focus on Italian and German cases studies. The main results are summarized and furthermore supported by suitable case study examples from both countries. This classification is a first draft of how to group the different activities considering the wide range of urban agriculture. The main aim of WG 3 is to set a catalogue of entrepreneurial models of urban agriculture. The work of this STSM is supposed to support this catalogue creation of the Working Group.

Subsequent to this short scientific exchange the host department in Perugia and my department in Soest agreed on continuing the joint work in the field of entrepreneurial models of urban agriculture. Based on the manual cluster building we think of jointly conducting a statistic-based cluster analysis of Italian and German case studies to strengthen the methodology. Furthermore, the envisaged statistic-based approach can be a suitable tool to result in general business strategies of urban agriculture, like differentiation, diversification, low cost, etc.

Additionally, we submitted two abstracts for the international conference "Agriculture in an urbanizing society", which is scheduled for September 2015, related to entrepreneurial models of urban agriculture. Furthermore, we think of collaborations for scientific papers after getting additional feedbacks within the COST-Action – more specifically in WG 3 – and at the Conference in Rome.

References

HENRIKSEN, K., BJERRE, M., ALMASI, A. M. & DAMGAARD-GRANN, E., 2012: Green Business Model Innovation. Conceptualization report. Nordic Innovation Publication 2012:16. October 2012. http://www.nordicinnovation.org/Global/_Publications/Reports/2012/2012_16%20Green%20Business%20Model%20Innovation_Conceptualization%20report_web.pdf (March 12th, 2014)

OSTERWALDER, A. & PIGNEUR, Y., 2010: Business Model Generation. http://www.businessmodelgeneration.com (March 11th, 2014)

Confirmation by the host institution

UNIVERSITA' DEGLI STUDI DI PERUGIA

DIPARTIMENTO DI SCIENZE AGRARIE, ALIMENTARI E AMBIENTALI

Perugia, April 13th 2015

Prof. Dr.-Ing. Frank Lohrberg
Freier Landschaftsarchitekt bdla
RWTH Aachen University,
Lehrstuhl für Landschaftsarchitektur
Jakobstr. 2; 52056 Aachen

For knowledge to
Bernd Pölling
South-Westphalia University of Applied Sciences
(Fachhochschule Südwestfalen)
Lübecker Ring 2
59494 Soest, Germany

Object: Confirmation by the host institution of the conducted Short Term Scientific Mission within EU COST-Action "Urban Agriculture Europe"

Dear Prof. Frank Lohrgerg,

I confirm that Bernd Pölling successfully completed his Short Term Scientific Mission "Empiric study – classification of entrepreneurial models of Europe's urban agriculture" at our Department of Agricultural, Food and Environmental Sciences of the University of Perugia from March 23rd until April 1st, 2015.

With best regards,

(Prof. Biancamaria Torquati)

Dipartimento di Scienze Agrarie, Alimentari e Ambientali (DSA3) - Borgo XX Giugno 74 - 06121 Perugia
Prof.ssa Biancamaria Torquati: Tel: 075 585 7142 – Fax: 075 585 7246 .- E-mail: bianca.torquati@unipg.it

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