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Linking landscape education, research and innovative practice

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LANDSCAPE FORUMS for Sustainable Food Planning

Foodscapes in Rome – Sarajevo – Bucharest – Munich – Bratislava – Rimini

Edited By

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*For our loving friend and special colleague **Harlind Libbrecht**, who was with us with his unique contribution and kind spirit in our journeys to LE:NOTRE Landscape Forums ....*

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Introduction

The LE:NOTRE Landscape Forum

This publication presents the results of a series of workshops on rural change and foodscapes that took place within the framework of a series of LE:NOTRE Landscape Forums. The Forum is an event that focuses on dialogue, debate, and discourse, where colleagues from a range of landscape disciplines interact in an informal workshop and field visit settings. Each forum aims to create a stimulating environment to promote the generation of new ideas for teaching, research and local strategies. It enhances cross-fertilisation between theory and practice, by collaboration of international academia with local experts and participants.

The Forums are prepared and organised by members of the LE:NOTRE institute and the local hosts. Part of the preparations are series of introductory lectures, an international student competition that relates to the local landscape.

After the first Forum in Antalya (2012), the working group Rural Change focused more on the foodscape aspect. This resulted in studies of the foodscapes in the Dragona Meander near Rome (2013), the rural fringe of Sarajevo (2014), the Pantelimon area north-east of Bucharest (2015), the Northern Fringe of Munich (2017), the cross-border landscape around Kittsee, Jarovce and Rajka near Bratislava (2020), and the transect from Cesena to Cesenatico near Rimini (2022).

Foodscapes

Foodscapes are understood as all those areas that contribute to food production such as arable land and farms, orchards, allotments, and vegetable gardens in combination with the social capital they build. Food and its production may help us connect and find shared interests across cultures. Food production could be re-envisioned as a partnership between consumer associations, foundations guiding the overall goals and corporate partnership of farmers. This would provide opportunities for jobs for disadvantaged groups like migrants and refugees.

The connection between people and food should be strengthened to attract children to spend time outdoors, rather than in front of a computer screen. The landscape should give people the opportunity to grow their own food for their physical and mental well-being. Multifunctional, inclusive, and organic farms can help to protect and develop green corridors consisting of nature reserves, nature development zones and landscape development areas. Therefore foodscapes should be well connected to the networks of recreation and nature protection to trigger mutual benefits.

Development over time

This collection of studies and strategies of local foodscapes presents how the body of knowledge on foodscapes has developed. We aim provide inspiration to contribute to the sustainable development of regional, peri-urban and urban landscapes.

Meryem Atík & Jeroen de Vries, LE:NOTRE Institute

Chapter 1.

1. The rural fringe and Rome - Production or Culture?

Group Members: Hanna Bornholdt, Cristiana Costanzo (local expert), Ewa de Mezer, Jeroen de Vries (ed), Shelly Egoz, Albert Fekete, Marti Franch, Anna Galecka, Xili Han, Nilgül Karadeniz, Paulina Korhonen, Sophia Meeres (ed), Krzysztof Rostanski, Gunther Vogt (Keynote Speaker)
Local Expert: Cristiana Constanzo

Rome, 2013

1.0 Area of study of foodscapes in the Landscape Forum in Rome

Participants of the workshop in the LE:NOTRE Landscape Forum in Rome discussed a strategy for agricultural land located on the outskirts of Rome, part of a semi-urban fringe that is located approximately 25 kilometres south westwards from Rome, not far from the sea, along the banks of the river Tiber. The study focused in particular on a bend of the river, known as the Dragona Loop. They applied a landscape approach that combines a landscape layer analysis (abiotic, biotic, infrastructure) with that of landscape characteristics and features to identify developments that can help improve the visual, ecological and economic value of an area.

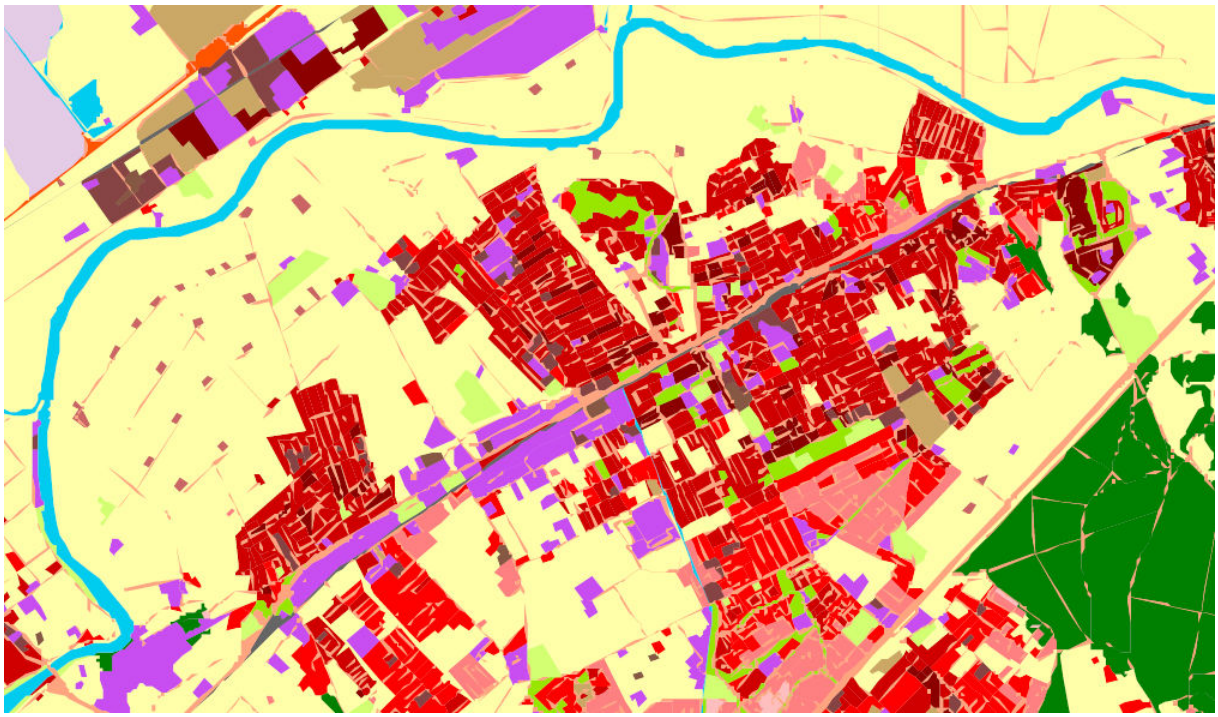

Figure 1. Dragona Loop and Dragona village

A landscape approach assumes respect for underlying and surrounding landscape character, multifunctionality, hybrid uses, added beauty and identity, democracy, stakeholder involvement, public participation, site adapted design, easy maintenance and pays particular attention to interventions that may be irrevocable.

In the case of Dragona, four themes were explored: (1) River corridor and water management, (2) Local food production, (3) Developing the urban/rural fringes for leisure, and (4) Enhancing identity of local villages.

1.1. The Dragona Loop explained by local expert Cristiana Costanzo

The introduction is provided by Dr Cristiana Costanzo, of La Sapienza, Rome, the State Natural Reserve of the Roman Coast and the Italian Society for the Protection of Birds.

1.1.1. A long period of natural change

The land between the Roman Coast and Rome was, many years ago, very different from its present day appearance. The current day configuration of the Tiber delta is the result of an evolution started at the beginning of the last ice age when the sea level was approximately 120 m lower than it is today and the river flowed approximately several km further out.

As millennia passed, the sea level gradually rose until, about 5,000 years ago, the phenomenon stabilised, having created a low lagoon area near the mouth of the river Tiber. Within the lagoon, salt-water evaporation occurred, forming saltpans that were utilised to their maximum capacity during Ancient Roman times, when the first roads also traversed the terrain linking the city of Rome to the sea and the settlement at Ostia, which was at that time located on the coast, with Portus to the north, on the other side of the delta.

During the Middle Ages, a phase of erosion combined with frequent river flooding changed the whole coastal area near the Tiber delta until, by the 9th century, the delta assumed the characteristics that it maintains today: those of a sandy zone along the coast and a swampy inland area, below sea level, invaded by small and larger pools.

1.1.2. Reclamation, agriculture, urbanisation and appreciation

The *Roman Agro* refers to the vast geographical area that surrounds the city of Rome. It includes the portion of territory, object of this study that extends to the south-west beyond the city, through suburbs, wetlands, farmlands, dunes and woodland to the Tyrrhenian Sea. Politically and historically, the Agro represents the zone of influence of the city, reflecting contractions and expansions that have occurred through the ages.

The floodplain of the river Tiber, including land now lying within the Dragona Meander, all of it part of Rome's contemporary Agro, was gradually transformed as described above, its changing states linked with thousands of years of fluctuating water levels, a shifting river delta and evolution of technological know-how and cultural practices.

Evidence of road and town building, salt collection and water management dating from the Roman era may be seen in the ancient settlements of Portus and Ostia that lay on the then coastline. The nearby settlement of Acilia also dates from Roman times, located on the direct road between Ostia and Rome.

Apart from the towns, remains of the port, roads that connected them to Rome and remains of the salt ponds and drains in the area near Ostia may be seen. This lowland lagoon area was an important source of salt in Roman times; however quantities of river deposits caused the coast to

move inexorably westwards, constantly silting up natural inlets and outlets, creating stagnant freshwater and salt ponds and forcing the Romans to maintain and lengthen channels that connected the salt ponds to the sea.

On either side of the Tiber, conditions remained more or less the same for centuries: a large, relatively flat, but uneven alluvial floodplain of salt flats, ponds and marshes interspersed with water meadows, riparian vegetation and patches of woodland and farmland. After the collapse of the Roman Empire, however, when the city of Rome itself was reduced to sparse groups of inhabited buildings within areas of ruins, spontaneous vegetation, vineyards and market gardens, the surrounding countryside was more or less left to itself. Over centuries, constant flooding and changes in the river delta caused changes in level, soil and vegetation until eventually, by then floodplain also supported a natural mosaic of riparian woodland and wetland ecosystems.

The population remained sparse during this time and if the artistic treasures of Rome were increasingly part of the “Grand Tour” itinerary from the early 18th Century onwards, the dark and dangerous countryside around it was almost certainly not: not only was there little to see outside Rome, apart from a few farms, the fear of malaria, the plague, cholera, isolation and highway robbery was enough to deter all but the bravest of aristocratic gentlemen!

The swampy area on the outskirts of Rome was known to be unhealthy and attempts were made by the Papal State to drain it between 1858 and 1868. These failed, but after the reunification of Italy, when the capital was moved from Florence to Rome (in 1872), efforts to reclaim the marshlands to the south west of the city were renewed, again largely for health reasons. Finally, in 1884, hundreds of labourers from Ravenna were hired to assist in a vast project of ditch digging, ground raising and pumping of water.

With the installation of pumps near Ostia, 150 acres of marshland were drained though a system involving approximately 90km of primary and secondary ditches. The removal of water took place in a relatively short period of time, but further long term and complex works were required to ensure that this new land remained safe from flooding. Recalibration of the river and its plain continued until 1936 with the construction of levees, the narrowing of the Tiber riverbed and regularization of slopes.

This once swampy land, now drained and fertile, protected by a series of ditches and levees, served for cereal production, vegetables, pasture and hay. Horses and mules for the army were fed alongside dairy and beef cattle. The agricultural period was not destined to last uninterrupted for too long however: in World War II the retreating Germans inflicted damage on the drainage system that resulted in renewed floods.

The system was repaired, but at about this time, pressures of suburban development also began to affect the land. Leonardo da Vinci Airport was built in the Municipality of Fiumicino to the north of the Tiber and, from the fifties onwards, unplanned and unregulated settlement spread outwards from Rome and along and inland from the coastline, interspersed with quarrying activities,

road building and commercial zones that further deleted and fragmented remaining agricultural and natural land.

The unplanned nature and density of urban expansion has confused the landscape palimpsest, diminished the area's identity and history and resulted in banal types of urban settlement, one of which is Dragona. It's a hybrid landscape, the sum of several places and non-places that combine to form a variety of scenarios that mix the contemporary urban edge with an agricultural past, historical settlements with water and transport infrastructure and patches of ecologically rich land with tourism, the sea and the dunes. Nevertheless, the fundamentals of this landscape remain: the river, the plain, the drainage system, its lines of eucalyptus and fields of crops, pasture and market gardening combine to provide an agricultural and leisure base of great potential.

1.1.3. Efforts to protect the 'Agro'

In the 1970's, various local and national associations began seeking to protect ecologically sensitive and beautiful land on Rome's shoreline from urban sprawl. In 1987 the Ministry of Environment identified a conservation area stretching almost 40km along the coast between Palidoro (to the north west of the mouth of the Tiber) and Capocotta (to the south east), covering almost 16,000 hectares of land of natural, historical and archaeological interest in the provinces of Rome and Fiumicino.

This park includes the last section of the Tiber and agricultural lands recovered by drainage of the ancient marshlands, including land enclosed by the Dragona Meander. In 1996, the protected area was officially renamed the 'State Natural Reserve of the Roman Coast'. The reserve includes a variety of sites of natural, cultural and ecological interest: coastal dunes, river and agricultural landscapes, salt ponds, pine woods, Mediterranean forest, the tumuli of the Bocca di Leone and remains of the Roman city of Ostia.

1.2. The workshop and aims of the study

The rural group discussed past, present and future factors influencing land located on the outskirts of Rome, part of a semi-urban fringe that stretches south westwards from Rome to the sea, along the banks of the river Tiber. The study focused in particular on a bend of the river, known as the Dragona Loop.

The area had been studied by colleagues (La Sapienza) who concluded that it was at risk, despite its location within the State Natural Reserve, because of the pressures of urban development. "*This landscape of long historical claim has undergone much transformation. The most important, in my opinion, took place after the unification of Italy and the nomination of Rome as the capital of the Country. The marshes, ponds and riparian woodland of this part of the river Tiber's floodplain largely disappeared as the land was drained and put to mixed agricultural use. Today this flat landscape that supports a number of family farms (typically cereals, dairy, sheep and market gardening) is threatened by urban encroachment*".

Questions raised before the forum included:

- What is the pressure to build and what do the planning rules say?
- Are the planning laws respected?
- Is the current status of the land as a “reserve natural state” a proper reflection of its value and what protection does this status confer upon the site?
- Are current agricultural practices financially viable? Could leisure bestow an added value to this land, or could new types of agriculture add value?
- Does this land primarily serve the inhabitants of the Dragona quarter, in terms of local produce and leisure, or do the people of Rome also value this land and its productions? Do the people of Rome know that this land exists?

Furthermore, the fact that the river Tiber connects this land to the centre of Rome, seems to present an opportunity to enhance the socio- cultural value of what might be a declining agricultural landscape.

By focusing on a relatively small area of land, on the fringes of Rome, on the concept of change and on the case study (as a tool that can link teaching, research and innovative practice), our intention was to discuss the factors influencing possible futures for this land and, at the same time, shed light on three aspects of the discipline of landscape architecture: research, practice and education.

Workshop participants made use of historical maps in addition to contemporary plans and tools such as Google Earth. No information was provided on planning laws, local demographics or economical situation. The field trip consisted of a walk along the stretch of the river Tiber that forms the boundary to the study site and a more or less perpendicular transect from the river to Dragona village (Figure 2).

Figure 2. Exploring the village of Dragona and its surroundings

The short walk, combined with maps and plans, aimed to allow an understanding of the site and interrelationships between the river, levees, ditches, fields, farms, trees and forest remnants, built up areas on both sides of the river and the sea. Such a superficial approach to the site, and lack of local or public participation, meant that many questions concerned with socio-economic, legal and local organization of the Dragona Loop were unanswered.

1.3. State of research: rural fringe, urban fringe: terms and concepts

The “urban fringe” is part of the developing discourse about urban environments, but there is no commonly agreed definition of the term and expressions such as urban fringe, rural fringe and peri-urban zone are interchangeable. These terms describe the area on the edge of a town that reflects transition between urban and rural use: it is a zone of interface between town and countryside. The fringe may be viewed as a landscape type in its own right: characterised by tracts of agricultural land, woodland, often poorly managed and even abandoned or untended land. Fringe areas also usually contain “out of town” urban uses such as commercial centres, airports, manufacturing industries and waste water facilities.

The SURF project, or Sustainable Urban Fringes (part of the Interreg IVB North Sea Region Programme) studied elements that contribute to sustainability, inclusiveness and spatial quality in urban fringes and therefore in cities as a whole, suggesting that wherever they are situated, urban fringes tend to share certain characteristics: To a greater or lesser extent these are areas in transition, impacted by expansion of a city’s needs (such as housing, infrastructure, and commercial development) that necessitate changing land use.

Dynamism within the urban fringe arises as land converts and adapts to different uses, often conflicting with any role as depository for historical and cultural heritage. Highly contested, territory on the fringe fulfils overlapping functions, serves a range of interests and offers a range of potential development or conservation options, including as location for new urban services.

The fringe tends to be an untidy landscape where land can be variously traded or banked by a range of commercial, voluntary or public sector agencies, often with conflicting interests. It can contribute enormously to the quality of the living environment. It offers the urban population experience of nature and green surroundings. Green space in the urban fringe is increasingly promoted for its health benefits and respite from urban lifestyles.

Housing and other, often low-density, developments that require space but are urban in nature (shopping malls, infrastructure nodes) are frequently located within the fringe. Such demand can inflate the value of fringe land, creating competing conditions and conflict within planning systems. Indeed, the administration of fringe can be influenced by complex arrangements typified by governmental and non-governmental structures with authority in a variety of contexts. These often include statutory infrastructure delivery agents, arms-length development agencies, environmental quangos and voluntary conservation bodies etc., in addition to different tiers of formal government planning and regulation.

The urban fringe is an area of rapid growth. In Europe, disciplines interested in the built environment: architecture, town planning, urban design and landscape architecture are increasingly interested in the urban fringe. The rapidly growing transitional areas located at the edges of cities have become a focus of attention. Indeed, the area of built land (the blocks) in Europe’s low-density urban fringes already equals that of its city centres and the fringe areas are growing four times as fast as the city centres (PIORR et al, 2010).

1.3.1. The urban fringe is an area of research and study

Several EU funded large projects have studied city fringe areas (urban fringes, rural fringes, or peri-urban zone) on the pan-European level and there is increasing literature on the subject. Research results from the EU FP6 PLUREL (2011) project showed that urban development is by far the most rapidly expanding land use change in Europe.

Today, the European areas classified as 'peri-urban' have the same amount of built-up land as urban areas, but are half as densely populated. There is a real risk of increasing urban sprawl and, if the trends identified by PLUREL continue, built development in peri-urban areas could double between 2040 and 2060.

Similar modelling indicates that land fragmentation, loss of habitats and amenity that are already characteristic of the peri-urban today will worsen. Meanwhile, the urban fringe is also a place of innovation and increasing employment in the service and IT sectors: 25% of peri-urban regions are classified as 'highly innovative'. The SURF project, or Sustainable Urban Fringes (part of the Interreg IVB North Sea Region Programme) SURF defines the urban fringe as the zone connecting urban and rural areas, where urban and rural functions and characteristics interact.

1.3.2. The urban fringe is an area of risk and potential

SURF identified challenges that face urban fringes as including spatial planning and sustainable development, complex issues of ownership and administration, fragmented spaces, declining biodiversity, deteriorating water quality, low green space value, poor access and lack of engagement with local communities, changing demographics and their impact on the urban fringe and inconsistent planning policy.

SURF identified the fringe as an area of both substantial risks and opportunities. Risks lie in issues of deprivation and poor spatial quality that result from mono-functional space consuming developments for example waste processing sites, dis-organised small businesses and housing and unused farmland. Opportunities lie in the creation of attractive green spaces, diverse habitats, local production of food and sustainable energy, multifunctional facilities for flood prevention and water storage etcetera.

1.3.3. The urban fringe is critical to sustainable development

SURF defined five dimensions in the concept of sustainable area development. Social, environmental and economic phenomena are always cited as crucial, but the influence of "space", or "spatial quality" and "process", or "governance" is particularly important to disciplines that are involved in the design and planning of human settlement, including, of course, the urban fringe.

Rather than balancing different interests and qualities, SURF aimed at realising potential synergies between them, combining, for example, strengthened environmental values with enhanced accessibility of rural areas and high quality job opportunities. SURF concluded that such a complex process must be a participative one and that the empowerment of stakeholders was important in developing sustainable urban fringes (Bornholdt et al., 2014).

1.3.4. Spatial quality, social quality and governance are critical factors

De Vries et al (2010) attempted to further define the concept of sustainable development, in regard to the urban fringe, but applicable to all human settlement. The tenets of the paper are particularly pertinent to the discipline of landscape architecture that, through spatial design, attempts to help resolve extremely complex society related issues. They identify seven components, rather than the usual three, as crucial in sustainable development:

Environmental quality: The environmental dimension of sustainability supposes energy saving, climate change reduction, safeguarding of natural resources, pollution prevention and biodiversity conservation, all of which can be addressed across the full variety of scales and sites.

Social quality: Van der Maesen and Walker (2006) defined four domains of social quality: security, cohesion, inclusion and empowerment that affect the characteristics (and liveability) of an area. Socio-economic security covers issues like finances, housing, health care, availability of work and education. There is evidence that green space is beneficial for health, in many ways: by decreasing stress, improving air quality and through easily accessible opportunities for physical exercise like walking, cycling, playing and sporting (Maas, 2009). Social cohesion can be stimulated by the spatial design of common spaces and facilities where people meet and communicate. Van Dorst (2006) demonstrated that social cohesion can be stimulated by the layout of streets and houses thereby contributing to sustainability and liveability. Involvement of underprivileged groups in decision making processes, communication and maintenance of open space can contribute significantly to social inclusion and empowerment, and lead to open space that is better adapted to the needs and interests of these groups.

Economic quality: Economic quality supposes the availability of conditions to make a living in an area through availability of natural resources and other economic assets, availability of appropriate infrastructure for entrepreneurship and education as well as through facilitating government regulations and regimes. Measured through indicators such as unemployment, earning capacity of an area, or region, and long-term investment. Spatial quality: SURF followed the definition of spatial quality used by the Dutch Ministry of Housing, Spatial Planning and Environment in their Spatial Planning documents (See e.g. Ministry of Housing, Spatial Planning and Environment, 2005) that identifies three main characteristics that determine spatial quality:

Functional value: Logical, safe and practical arrangement of functions and activities in a space; accessibility of transport (walking, cycling, public transport) and connections between urban and rural areas; multifunctional land use where possible; separation of functions where necessary.

Aesthetic value: although to a large extent subjective and individual, some common and broadly accepted elements of aesthetic value refer to issues of local identity, visibility of natural elements and cultural history, legibility of the landscape.

Future value: Refers to the adaptability of an area for possible future changes in functions, needs or life styles. Quality can be measured. Aesthetics: do people like the place? Logical structure: can people find their way around and understand where they are? Convenience: can they do the things they want too easily. Assink and Groenendijk (2009) argue that spatial quality is gaining importance as a factor for location choice of companies.

Process quality: A final dimension focuses on the involvement of stake-holders in informal decision making and formal planning processes. Given that sustainable development always means taking into account different qualities and therefore different stakeholders, the process dimension is of crucial importance. The challenge is to deal with the different perspectives and qualities not only individually but in an integrated way, focusing on the realization of synergy between qualities and between needs and interests of different stakeholders (Bornholdt et al., 2014).

The urban fringe is an area of food production

Food production at local, regional and global scales is an increasingly important research theme. In her book "The Hungry City" (Caroline Steel, 2008) considers the role of food (production and distribution) in the structuring of rural and urban space. She advocates of a more localised and complex system. Donald Chong's 'Small Fridges Make Good Cities' (2007) is recognised as a concise manifesto on both urban living and refined design culture.

Major cities, for example London, Amsterdam (CITIES Foundation, 2011) and Toronto have begun seeking policies and programmes to help improve relationships between city living and rural and urban areas of food production (Bornholdt et al., 2014).

1.3.5. The rural fringe: How landscape architecture relates to it

The urban fringe: *Challenging the traditional urban/rural dichotomy* "…contestation, (between) the driving forces and the assets of the fringe, is to a large extent related to the landscape" (Qviström, 2013:435). The urban fringe is the subject of attention of landscape architecture and planning academics (see SURF 2012, for example) and study of the constraints and potential of a hybrid, liminal "in-between" spatial entity is a developing field. Fascination with this new landscape type (the fringe) is due to a state of flow and amorphousness that make up a particular spatial fabric that can be described as neither 'urban' nor 'rural'. New understandings and strategies are required to address spatial issues as well as ecological, social, cultural and economic challenges that affect contemporary settlements. One of the main contemporary discourses relates to challenging the

traditional division between 'city' and 'country' or 'urban' and 'rural' as distinct unconnected bodies (Qviström, 2010 & 2013).

In most places, the pressures of urban expansion include the transforming of agricultural, or natural, landscapes. Changes in land-use and accelerated development processes may have a dramatic impact on the fragmentation of fringe landscapes and affect the wellbeing of those who reside there. However, the complex ambiguity of fringe development requires in-depth analysis from a multi-faceted, interdisciplinary perspective.

Traditionally, the urban fringe was associated with informal settlement and social marginalisation. Industrial modernity, on the contrary, associated withdrawal from the city and settlement in vicinity of nature and rural idyll with luxury or emancipation. Contemporary notions of the urban fringe are more ambiguous however, recognising a shifting territory of great contrasts and complexity.

At the urban fringe in European cities, we find everything from a city's most exclusive residential areas to temporary camps (of the Romany people), commercial and industrial zones, transport hubs, waste processing plants and farmland. These fast growing areas on the city fringe are part of an ongoing transition involving transformation of the 20th century Metropolis into a polycentric regional system – a conurbation or a post-metropolis (Soja, 2000; Torres, 2004). Addressing the urban fringe as third type of landscape may shed more light on today's challenges of socio-spatial integration (Secchi, 2010).

1.4. Dragona, the final leg of river Tiber

The Tiber flows 400 km from the Apennine mountains through Emilia-Romagna, Umbria, and Lazio, to Rome and through the city before meandering the last 15 km of its journey through rural remnants on the city fringe and finally draining into the Mediterranean Sea between the seaside towns of Fiumicino and Ostia. This group followed the river through its final stages, on the "other side" of the outer ring road, as it passes through vestiges of fields and farms in the flat alluvial plain also shared with other activities typical of the urban fringe: housing development, industrial and commercial warehousing, out of town shopping, Rome (Fiumicino) airport and the ancient remains of "old" Ostia, a town located on the coast in Roman times.

A day at the river (or a study trip)

The study group drove to Dragona by bus from Rome. We left the city centre behind and passed through suburbs and undeveloped land on the urban fringe before arriving at Dragona, a modest suburban settlement located (it seemed) somewhat far from Rome

We expected an older centre, but we didn't see one. Dragona is a new settlement, laid out on a simple grid of residential plots. From what we see, private gardens are mainly ornamental although some of them are vegetable gardens. We see little or no public space and no sign of the countryside.

One can smell the sea. We climb down from the bus, turn a corner, walk down a suburban road lined with detached houses that ends abruptly at a gated entrance beyond which a row of large pines shades another road. We go through the gate and suddenly, we're in the countryside!

Large fields (of wheat), a tractor spraying and a large farmhouse (these people must be wealthy) make up a family farmstead. We don't know how old it is. The landscape is open, completely flat, no hedges, and apart from eucalyptus planted along drainage channels, there are few trees, no shade except on the horizon. We're walking on a dusty path. The river lies behind a raised dike so we climb up onto it to get a better view. Fishermen. A boat: bird-spotters! From up here we have a good view of the river and its surrounding land; it's cooler up here too. There are a few walkers, and bikers.

There are farmhouses dotted around the fields, associated with the field pattern; people live in these houses. The field pattern is evident. Many of the fields are quite small. The drainage channels that criss-cross the land are a surprising feature, often lined with eucalyptus (Figure 3).

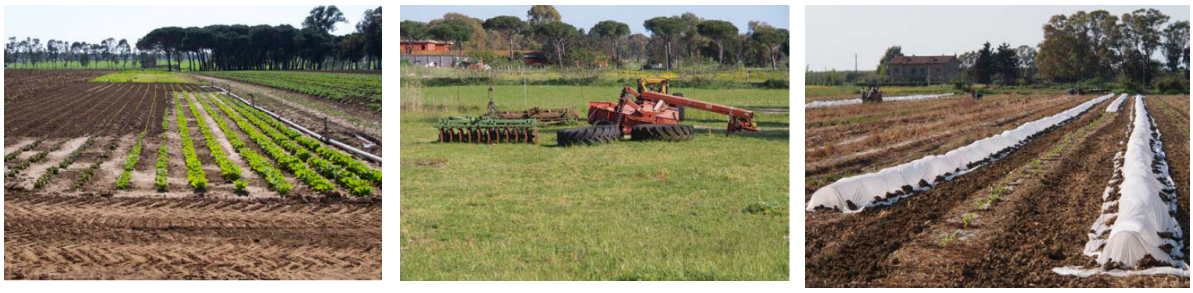

Figure 3. Tenuta di Dragone farm: Production, working farmland and market gardening

The banks of the Tiber are overgrown, sometimes the river is inaccessible and hardly visible, in other parts sheep are grazing. Adjacent land is protected from flooding by a raised dike on either side of the river; presumably the land between the dikes can flood, but in April 2013 the river's edge is lush and green and the water level is below that of the riverbank. Across the river there's a commercial centre. Roofs rise into view across reeds. An industrial centre is also visible, and the airport. The sight of planes is a feature of this landscape, although we cannot hear them. On this side of the river there are sheep, some cows, some market gardening, some poly-tunnels, some cereals, some hay. There's a farm shop, selling dairy produce amongst other things. We're walking back towards the town of Dragona and, as suddenly as we left it, we enter it again.

This is a pleasant piece of land, reminiscent of the countryside; it's surprising that it's so close to the centre of Rome. The walk along the dike is wonderful. One wonders how much the water level rises but there's no clue. A sign shows that it is possible to walk or cycle back to Rome along the dike, we are connected to the city by the river! And we know from our maps that we're also connected to the sea (Figure 4).

Figure 4. Tiber river, communal farm buildings "colonia" and a atop dike across the river

1.4.1. Ecological quality

We expected broad river banks with water meadows, marsh and a mature riparian habitat for birds and wildlife; interspersed amongst the agricultural fields, trees and hedges or verges of wildflowers - the trip took place in the springtime.

We were surprised by the lack of riparian habitat normally associated with a major river. The artificial floodplain between river and dike was too narrow, there was some semi-natural habitat (clumps of willow, elder and ash), but the size of the floodplain limited its contribution to any ecological system. In places, sheep grazed the riverbanks, elsewhere along the river there was some natural flora and fauna: grasses, herbs, wildflowers, birds, small animals and fish, but nevertheless, the agricultural area near Dragona cannot provide for a rich wildlife (Figure 5). There were few trees and, except for overgrown drainage ditches, little "unfarmed" habitat. There was very little woodland to be seen on the east side of the Tiber. The water quality of the river may be affected by upstream diffusion of wastewater. There were, however, fishermen and bird spotters.

Figure 5. Bird spotting by boat on the Tiber and a dike separating fields from the Tiber river

1.4.2. Cultural value

Whilst some expected an extensive, well-functioning agricultural area, others expected degraded farms fragmented by infrastructure and urban development. At least one participant thought that we would be unable to enter the farmland because of land ownership issues. Many expected the countryside to be linked to the settlement of Dragona, which many expected to be a traditional village. Some imagined groups of farmhouses set into fields.

We all expected recreational potential to be poor, with little or no easy public access to the river, because of private farmland, consisting perhaps of a few paths and picnic places. The suburbs have disrupted farmland within the Dragona Loop, however there is a distinct separation between the town and agricultural land caused either by land ownership or planning laws.

The remaining agricultural land forms a relatively small, but integral landscape on the east side of the river. The large farmstead, Tenuta di Dragone seems wealthy; we saw no abandoned land. The 19th Century system of drainage and irrigation channels structures the landscape and communal farm buildings are also prominent features. The latter appear to have been converted into residential houses, although we do not know if their occupants have anything to do with the farms.

The agricultural land that we saw seemed well maintained, supporting a mix of cereal crops, market gardening, dairy and sheep farming. Some farms and some fields were larger than others. Close to the suburb there was a riding school, tourist accommodation and two farm shops. The dike forms part of a bike trail that runs from the centre of Rome to Ostia Antica, along the Tiber. The dike also serves for local jogging, dog walking and evening walks, we also saw people fishing and a couple of small motorboats on the water.

1.4.3. Identity

The area maintains an agricultural identity in a relatively recently drained landscape structured by a ditch system accentuated by lines of eucalyptus. The Tenuta di Dragone is a family farmstead; elsewhere, communal farm buildings punctuate fields that seem to have preserved their original patterns. There is division between agricultural land and the built suburb; both of which seem to ignore the other. The latter is connected to the city by the metro, but unemployment levels are high and we are told that Dragona is not an area without problems.

Nevertheless, its residents can and do enjoy the recreational potential of the agricultural landscape. They also buy local and imported food at the farm shops. The character of the settlement differed from our expectations, but had we looked more closely at maps before the fieldtrip, we'd have known that there was no historical village (Figure 6). Dragona is a relatively recent, relatively low density, low-rise heterogeneous collection of detached residential constructions (one family houses, small apartment blocks) within a grid of regularly sized parcels serviced by narrow streets. The monotony of the suburb is brightened by the variety of more or- less ornamental gardens.

Within the Dragona Meander visual landscape features are: flat land, drainage systems with a regular grid of channels, pumping stations and waterways, the river Tiber with 4m high dikes, the Tenuta di Dragone farmstead with surrounding garden, fields and avenue of pines, regular field structure and late 19th Century farm buildings that formerly functioned as storing places for crops and machinery (Bornholdt et al., 2014).

Figure 6. Working for enhancing the strong agricultural identity that remains

Teaching about aspects of the rural fringe

The area of the Dragona Loop was not studied in great detail; an afternoon on site and a few maps provided us with a superficial and incomplete vision of the place. However, this area can correctly be described as a rural hinterland (Antrop, 2004) to the city (of Rome) with complex spheres of influence: the potential for local and second home housing, leisure (walking, fishing, boating, cycling, etcetera) and the added value of local agricultural products (dairy, fruit and vegetables).

As also observed in Dragona, the increasing complexity of human settlement and organisation is reflected by the multiplicity of factors that influence almost any site that one might choose to study. It is no longer possible to consider a single aspect of development. Understanding a site infers understanding not only landscape issues, but also socio-economic and environmental ones that influence the way people live and use the land, including making decisions about its future. Understanding the landscape is a question of understanding not only what, but why and how.

1.5. A landscape approach for the Dragona Loop

Some participants of this workshop in the LE:NOTRE Landscape Forum in Rome discussed a strategy for promoting the rural fringe in the Dragona Loop. A landscape approach combines a layered analysis (abiotic, biotic, infrastructure) with that of landscape characteristics and features to identify developments that can help improve the visual, ecological and economic value of an area.

A landscape approach assumes respect for underlying and surrounding landscape character, multifunctionality, hybrid uses, added beauty and identity, democracy, stakeholder involvement, public participation, site adapted design, easy maintenance and pays particular attention to interventions that may be irrevocable. In the case of Dragona, four themes were explored: (1) River corridor and water management, (2) Local food production, (3) Developing the urban/rural fringes for leisure, and (4) Enhancing identity of local villages (Bornholdt et al., 2014).

1.5.1. River basin management

The Dragona loop is a polder characterised by a flood control system of ditches and dikes. Enlarging the flood plain could help contribute to a more resilient river and riparian ecosystem, however

systematic flooding could destroy not only productive farmland but also the pattern of drainage channels and waterways, affect avenues of mature trees and possibly impact on local settlements (Figure 7). Developing marshes would strengthen nature experience (bird watching, walking along the river, through marshlands).

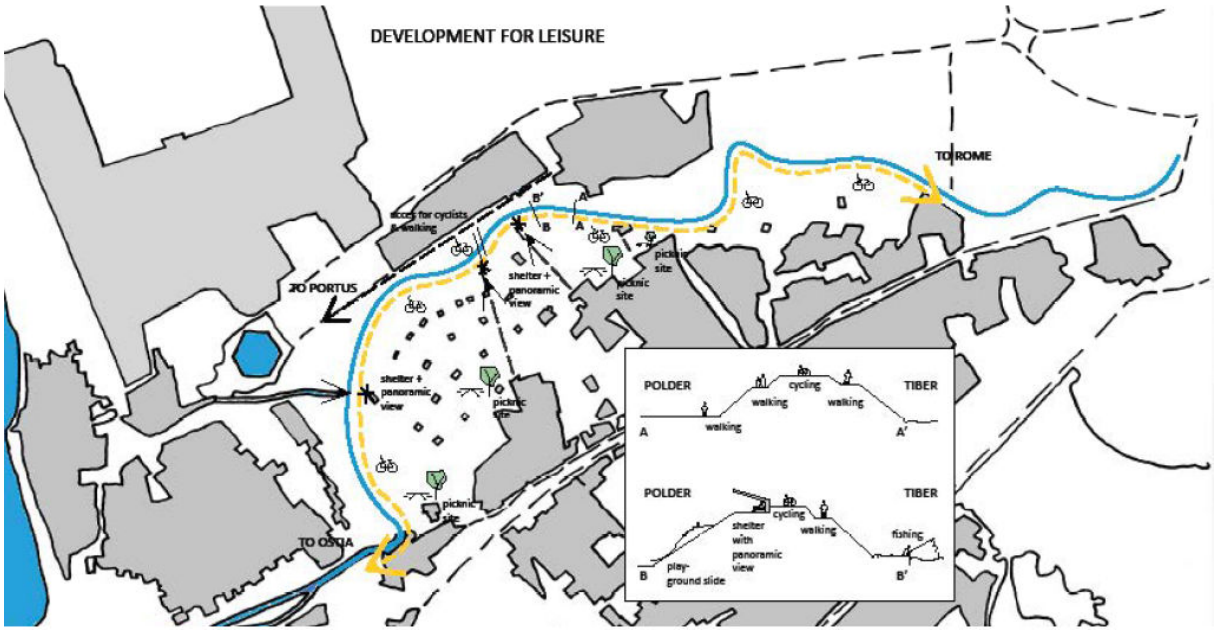

Figure 7. Development for leisure in the Dragona loop

1.5.2. Local food production

Several local farms currently produce and sell dairy and other products. Assumptions that the agricultural sector cannot survive must be confirmed. However, a combination of different types of food production, possibly including organic, could help boost the local agricultural economy, identity, social cohesion and quality of life. Several possibilities were discussed:

- local food production in private gardens and allotments bordering the suburb
- collectively grown local produce in community garden projects
- introduction of more extensive organic farming of local products
- combine all of the above with education about food and leisure activities such as “pick your own” products.
- re-introduce a special regional product and brand the Tenuta di Dragone as a farm that produces a special local product.
- Strengthen the brand by upgrading the estate to reflect the desired image e.g. by restoring the garden of the estate, screening the suburb, replanting Eucalyptus or other trees along the water channels (Bornholdt et al., 2014) (Figure 8).

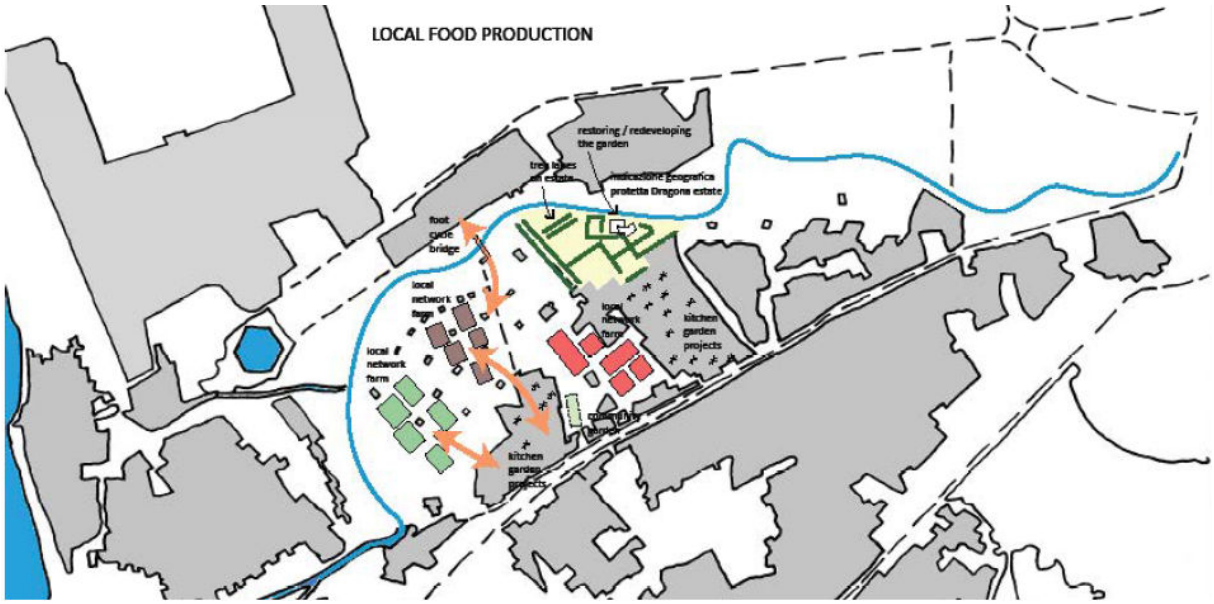

Figure 8. Concept for local food production in the Dragona Loop

1.5.3. Developing the urban/rural fringe for leisure

Local inhabitants use the riverside area for evening and weekend strolls, jogging and biking. The private road leading to the Tenuta di Dragone is a pine-shaded promenade and the landowners could benefit/ encourage passage by improving the gardens and the environment of the farm shop. A waterside footpath follows the Tiber from the centre of Rome to the sea offering spots for picnics, fishing and bird watching. The dike is developed into a linear park. The river itself can be used for boating. A bridge across the river makes the Dragona loop easily accessible for people who live on the north bank.

The footpath beside the Tiber could be improved, by providing places to sit, picnic, or by allowing access to the water, or across the river. A network of footpaths in the agricultural land could offer more possibilities for evening walks and picnic sites on the edge of the suburb (Figure 9).

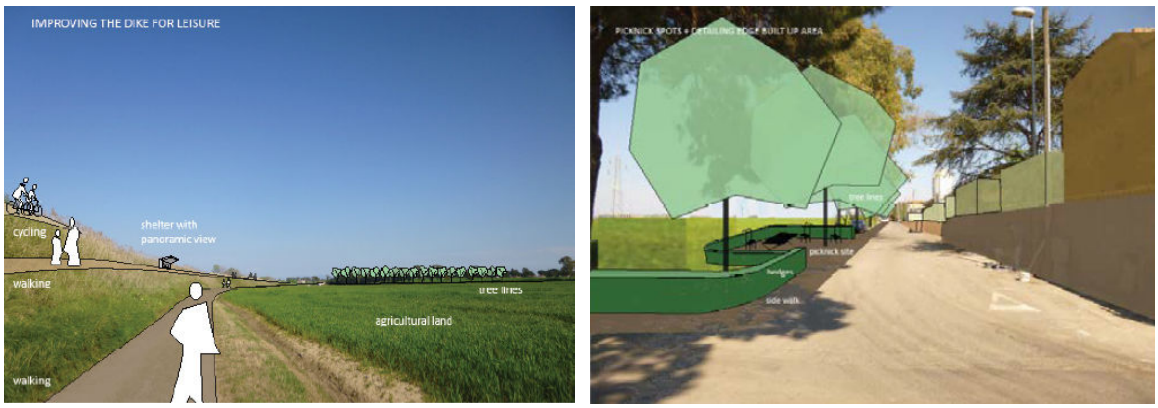

Figure 9. Improving the dikes for leisure and public use

1.5.4. Enhancing identity of local villages

Dragona is not a traditional village. It is a heterogeneous sprawl of housing, public space (roads, squares) are of poor quality, but private gardens seem to be quite large. The Tenuta di Dragone is visually connected to the settlement by an avenue of pines, but with no traditional "centre" Dragona is disadvantaged. Identity of the village could be strengthened by providing open public space, or a centre, or meeting place that allows for better exchange within the settlement, by strengthening links between the settlement and the river park, by renewing the green structure of the Tenuta di Dragone and its garden, by planting trees for shade along paths and waterways (Figure 10).

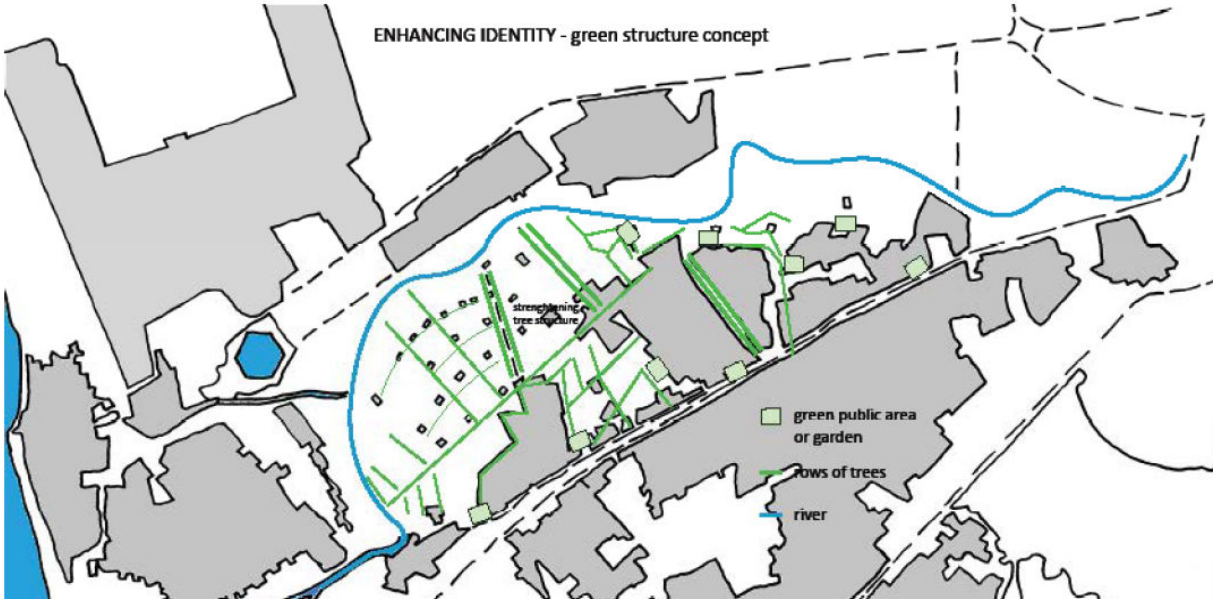

Figure 10. Concept for enhancing identity of local villages

1.6. Reflections and conclusions

The proposals above form a feasible strategy for the Dragona Meander with one exception: the lowering or taking away of parts of the dike to allow flooding. Such an action would severely impact on the existing land as much of it lies at, or below sea level. Furthermore, the creation of wetland in this area might cause the return of the mosquito – something that would also negatively impact on the local population.

By integrating the concepts for local food production, leisure and enhancing identity and discussing these with local stakeholders the Dragona Loop can be developed in a sustainable way. Multifaceted perceptions of the rural fringe were presented throughout the LE:NOTRE Landscape Forum.

A wide variety of multi-disciplinary and multi-cultural approaches was evidenced by the expert panel during the final "round table" discussions.

The Round Table discussion was chaired by Dr Nilgül Karadeniz of Ankara University and co-moderated by Professor Paolo Balbo. Members of the panel were:

- Professor Günther Vogt, ETH Zürich and Vogt Landscape Architects Zürich,

- Dr Cristiana Constanza, La Sapienza University, Faculty of Architecture.

- Piere Sala Martí, coordinator of the Landscape Observatory of Catalonia, UAB Barcelona,

-Marti Franch, visiting professor at ETSAB Barcelona, Estudi Marti Franch

-Professor Eliana Cangelli, La Sapienza University, Faculty of Architecture.

It seems to be generally agreed that rural and city areas have become increasingly intertwined and inter-dependent, in Europe. The production and distribution of food impacts all types of landscapes and rural areas - be they within a "near-by" fringe, such as the Dragona area of Rome, or further beyond, such as the Alpine Region - are also greatly influenced by the needs and activities of the urban population. Vogt maintains that Europe's urban population tends to view "the rural" as a leisure resource, or some kind of museum that needs to be protected.

As the UNITED NATIONS Population Division reported in 2012, the world population is 7 billion and half of it already lives in urban settlements. In Europe, however, a far greater majority of the population already lives (and will continue to live) in the current polycentric sprawl of well-connected towns with easy access to the countryside. Changing land-uses and lifestyles will nevertheless continue to transform Europe's urban and rural landscapes, particularly at their fringes, as cities sprawl. Professor Balbo calls for a change in paradigm, for multi-disciplinary discussion on how to "define" nature, how to "protect" nature, how to "value" nature, how to ensure that cultural sites are not lost?

A more holistic approach to infrastructure could help improve both existing and future quality of a third landscape type – the fringe. Traditional methods of design are changing in response to the scale of climatic and social change; such complex problems require a democratic strategy that recognises stakeholders and existing in-situ urban processes.

According to Marti Franch, development may help enhance certain existing values in the landscape, careful mapping can help reveal identity and landscape character and transformation can positively reverse issues of abandonment and degradation.

Yet, Franch too, refers to the need to accept changing landscape uses and representations. Piere Sala Martí presented results from the Catalonia landscape observatory work on the rural fringe, seeking new nature-culture-economy scenarios for hybrid landscapes. Such scenarios may relate to energy transition and the post-petroleum economy; new types of agriculture and forestry may respond to new markets. Tourism is starting to see peri-urban areas as complementary allies. The peri-urban offers local products, wine paths, business meetings, scenes for advertising. The singularity of rural landscapes can have a positive impact on emergent sectors such as cinema (Bornholdt et al., 2014).

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Chapter 2.

2. The Rural Fringe of Sarajevo – A Neglected Landscape or an Opportunity for Sustainable Development?

Group Members: Meryem Atík, Tamara Bajkuša, Sanela Klarić, Ingrid Belcakova, Matea Loncar, Ida Fasching, Margarida Cancela d' Abreu, Ingrid Sarlöv-Herlin, Amra Vehabovic, Tanja Udovic
Local Experts Tamara Bajkuša, Sanela Klarić

Sarajevo, 2014

2.0 Area of study of foodscapes in the landscape forum in Sarajevo

Participants of the workshop in the LE:NOTRE Landscape Forum in Sarajevo discussed a strategy for the Sarajevo Canton and in particular analysed the rural fringe around Sarajevo city near Petrovici. The study aimed to understand the form of transition in rural landscapes. Main questions were (1) what are the driven forces and factors that are influencing past, recent and future of these rural landscapes, and (2) how can alternative forms of agriculture and forestry lend meaning and perhaps economic benefit to this land?

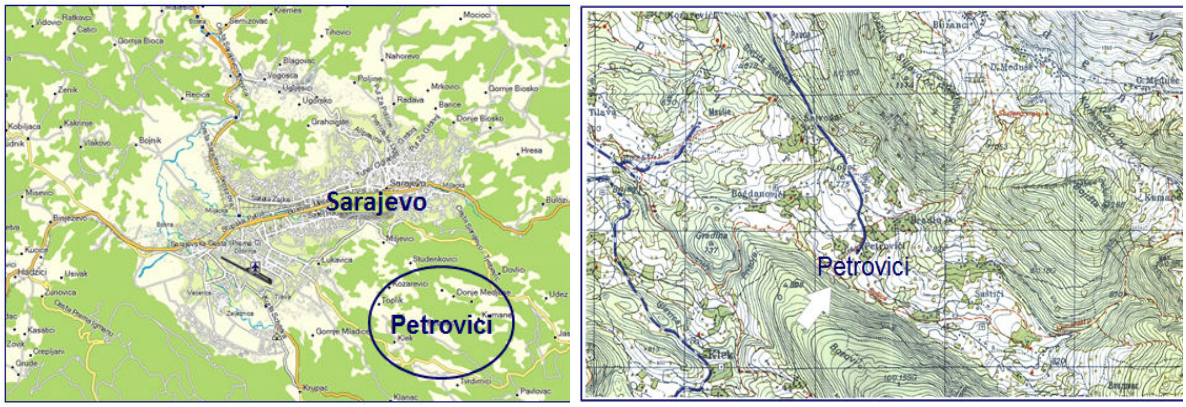

Figure 1. Rural fringe around Sarajevo and Petrovici

2.1. Rural fringes

The Rural Fringe is a dynamic intersection between town and countryside, environment and people, a buffer between urban and nature, land use, a boundary space that includes not land use but also infrastructure, value and interest having natural social, cultural and environmental functions.

Rural fringes remain largely open with the majority of the land agricultural, woodland or other rural use. The quality of the countryside around urban areas tends to be low with areas of open land and bad maintained woodlands and hedgerows. However they are often under development pressure driven by land uses such as new housing developments, leisure facilities, shopping centres, and industrial complexes. Therefore rural fringes are regarded as transition zones where demands of traditional rural life and urban expansion compete.

Acting as borderlines between urban and nature, rural fringes can become disturbed landscapes, neglected landscapes or valued landscapes depending on the interactions between man and nature and the character of the land.

The actual discourse on the urban environment relates to the "urban fringe", but there is no commonly agreed definition of the term and expressions such as urban fringe, rural fringe and peri-urban zone are interchangeable. These terms describe the area on the edge of a town that reflects transition between urban and rural use: it is the interface between town and countryside. The fringe may be viewed as a landscape type in its own right: characterised by tracts of agricultural land, woodland, often poorly managed and even abandoned or untended land. Fringe

areas also usually contain “out of town” urban uses such as commercial centres, airports, manufacturing industries and waste water facilities.

Land is one of our greatest assets, providing us with basic services, underpinning the economy and highlighting national identity and cultural heritage. The rural-urban fringe – often referred to as the 'outskirts', a 'hinterland', 'green land surrounding a built up area', 'on the edge of a settlement' or 'open land' – is the landscape interface between town and country, yet has all-too-often been a neglected and wasted resource (Sellick, 2014).

2.2. Policy and regulation for rural development in Bosnia and Herzegovina

Bosnia lies at the heart of the western Balkans and is characterised by a variegated topography and climate. Most of the land in Bosnia is hilly or mountainous, and both urban settlements and agricultural activities tend to be concentrated in lowlands and river valleys (Williams, 2013). Sarajevo is the capital of the Federation of Bosnia Herzegovina. It is the administrative, economic, educational and cultural centre positioned along the Miljacka River and around the mountains of Bjelasnica, Treskavica, Jahorina, Romanija, Ozren and Trebević (Neidhardt, 2007). The good geographic position at the crossroads of major trade routes made Sarajevo a leading economic, political and tourism centre in Bosnia and Herzegovina (Figure 2).

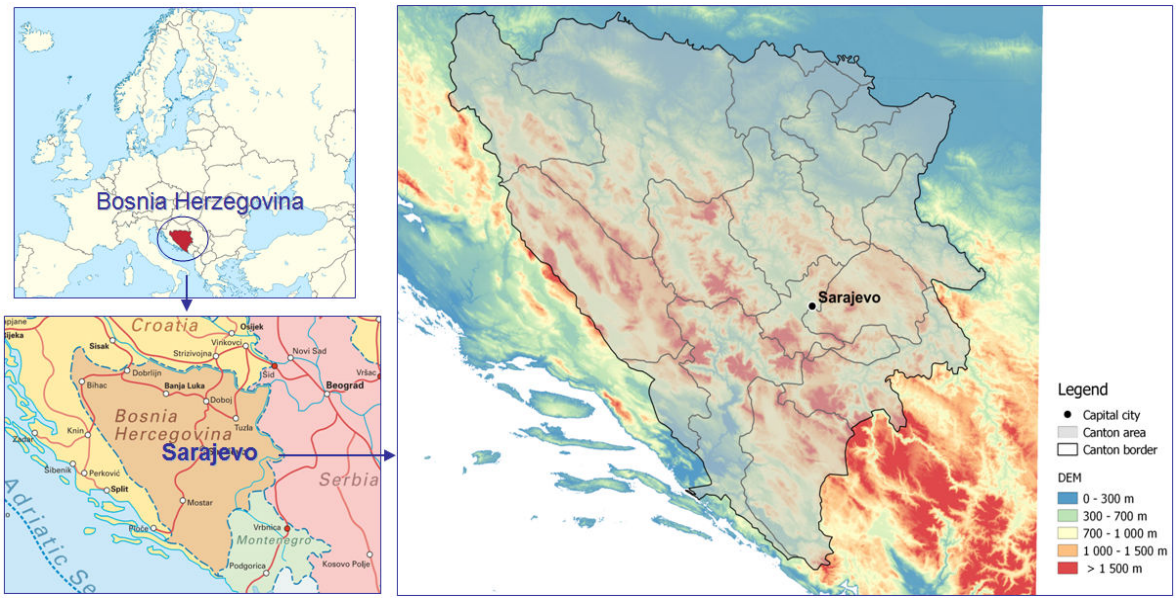

Figure 2. Location of Bosnia Herzegovina and Sarajevo

2.2.1. Rural development issues

Bosnia and Herzegovina is a mostly rural country; according to official figures, around 81% of the territory has a rural character where 2.37 million people (61%) live. In 2008 GDP in Bosnia and Herzegovina amounted to 24.7 billion KM; while agriculture share in total GDP was 8,40%. In 2009, agricultural share in total GDP of Bosnia and Herzegovina was 7.5%. Such data indicate that agriculture share in GDP is decreasing over the years, but even though official data are showing

that agricultural production is still important source of employment in Bosnia and Herzegovina. According to the Labour Force Survey for 2010, the agricultural sector employed 166,000 persons i.e. 19.7% of the total labour force. The main reason for this is a semi-professional-naturalistic approach to dealing with agriculture that is dominant in Bosnia and Herzegovina.

Topography often shapes the land use patterns in the landscape. Therefore elevation and predominant land uses in Bosnia are highly related. Aside from agriculture, other primary activities such as animal husbandry, forestry, and mining traditionally played an important role in the area's economy (Williams, 2013).

Most of the agricultural holdings are in fact family properties for personal use; and only a small part of these products is sold at local markets. Taking into account such statistical indicators it can be concluded that the importance of agriculture to the overall economy of Bosnia and Herzegovina is much higher than what statistics show. Despite its relatively low economic return in terms of income, agriculture has social dimension in the everyday life of the citizens of Bosnia and Herzegovina. Agriculture has the role of social buffer due to the fact that it provides food for the socially and economically weaker groups of the population in rural and semi-urban parts of the country (Figure 3). According to some estimation, nearly 50% of the population in B-H is in some way associated with agricultural production.

Figure 3. Semi-urban parts of Sarajevo (Atík, 2004)

As part of joining the European Union (EU), the main focus in the process of supporting the agribusiness sector, the EU prioritise the provision for "a better quality of life" for both producers and consumers. According to expert opinion, local rural economy still depends and will continue to depend on the activities in the agribusiness sector, although the emphasis should be placed on the development of other economic activities, especially those that benefit from agriculture (such as tourism and travel industry, and packaging industry) and that would improve service levels in rural communities.

Bosnia and Herzegovina is a highly decentralised country. It is consisted of two entities: Federation of Bosnia and Herzegovina and Republic of Srpska; and of one district, Brčko District, which is an administrative unit under sovereignty of Bosnia and Herzegovina institutions. All levels

of government (state, cantonal and municipal level) formally have defined responsibilities when it comes to rural development. The European Commission project (2004) "Functional Review of the Agricultural Sector" stated that this sector is not managed properly, due to the fact that division of tasks and responsibilities between the above mentioned four levels is not clear. In addition, within this sector there has been no establishment or development of cooperation, coordination and exchange of information, and therefore certain activities are treated in double, and some are not undertaken at all. The biggest problem of the institutional framework in this sector is the lack of institutions at the state level, in particular the lack of a ministry.

At the state level, most of the authorization relating with rural development is the responsibility of the Ministry for Foreign Trade and Economic Relations. The role of this ministry is, considering the complexity of the organization of the country, mainly coordination. This ministry is also an institution that is responsible for cooperation with the EU and other international organisations relevant to the sector of agriculture, nutrition and rural development.

The organisational unit within the ministry conducting activities in the field of agriculture and rural development is the Sector for Agriculture, Nutrition, Forestry and Rural Development; which is responsible for establishing the framework for the development of sectoral strategies, policies, programs and measures, and their implementation in order to harmonise development of agriculture across the country. There are two key bodies for managing sector of agriculture: The Ministry of Agriculture, Forestry and Water Management of Republic of Srpska; Ministry of Agriculture, Water Management and Forestry of Federation of Bosnia and Herzegovina. Brčko District has its own Department of Agriculture, Forestry and Water Management. In the Federation of Bosnia and Herzegovina this responsibility system is further divided so that all 10 cantons have established an administration competent for the issues of agriculture, veterinary medicine, forestry and water management.

In Bosnia and Herzegovina, rural development is defined by the Law on Agriculture, Food and Rural Development from 2008, where it is stated that rural development is: "*a set of policies, measures and activities aimed at a comprehensive economic, social and cultural progress of rural population, which are planned and implemented by taking into account the principles of sustainable development and the preservation and improvement of the quality of the environment*".

On the state level, there hasn't been formulated a strategy for rural development; but Ministry for Foreign Trade and Economic Relations along with support from European Commission, prepared a Strategic Plan for the Harmonization of Agriculture, Food and Rural Development for the period of 2008-2011, as well as an Operational Program for the Harmonization of Agriculture, Food and Rural Development for period 2008-2011.

As for the entities, the Republic of Srpska has adopted a Strategy for Rural Development for period 2009-2015, but is faced with a lack of evaluation of its effectiveness when it comes to implementing them. In the Federation of Bosnia and Herzegovina work is in progress; while the Development Strategy of Agriculture, Forestry and Rural Development in Brčko District was prepared in 2008 for the period 2008-2013.

Questions concerning environmental protection and tourism are not defined by The Constitution of B-H, they are entrusted to entities. As well as rural development, both environment protection and tourism on state level fall under the jurisdiction of the Ministry for Foreign Trade and Economic Relations.

Major institutions on entity levels and for District Brčko, accountable for questions concerning environmental protection and tourism are the: (1) Ministry of Environment and Tourism of Federation of Bosnia and Herzegovina, (2) Ministry of Physical Planning, Civil Engineering and Ecology of Republic of Srpska, and (3) Department of Planning, Property and Legal Affairs of District Brčko (Bajkuša, 2014).

2.2.2. Aims and objectives for rural development in the Sarajevo Canton

Sarajevo is a polycentric city with the central urban core and several smaller urban cores arranged around it. Sarajevo Canton is located in the central part of Bosnia and Herzegovina. It is where east and west, north and south meet, and where the layers of history and diversity of different cultures, their spiritual and material sediments, pervade (Fetahagić, 2010).

The Sarajevo Canton with a typical Bosnian geography is located almost in the centre of the country. It contains numerous mountains including Bjelasnica, Igman, Jahorina, Trebević andkavica. The cities of the Canton are built predominantly on the hills at the foot of these mountains, and the flatlands in between them. The most significant of these is a small depression upon which the bulk of the city is built upon (Wikipedia, 2014).

Of the nine municipalities of Sarajevo Canton in five urban population makes an absolute majority and in four municipalities, majority of the population is rural. Around 20% of the territory of the Sarajevo Canton is urban. The municipality, which is territorially the largest (25% of the territory of Canton) is 100% rural. However, only about 15% of the population of Sarajevo Canton lives in rural areas.

Population

According to estimations from 2005, 410,031 people lived in the area of Sarajevo Canton (1,277.3 km2) which is about 49,000 inhabitants more than in 1996, and over 115,000 less than in 1991. Sarajevo Canton participates significantly in the total population of the Federation of Bosnia and Herzegovina (17%) and Bosnia and Herzegovina (11%).

There are great differences in population density in Sarajevo. The most densely populated municipality, Novo Sarajevo has 7,412 inhabitants per km2 while less populated municipality, Trnovo has only 6 inhabitants per km2 (Table 1).

Table 1. Population density in the municipalities of Sarajevo Canton (2005)

Municipality	Number of inhabitants	Surface in km^2	Population density (inhabitants/km^2)
Centre	70.294	33,0	2.130
Hadžići	21.958	273,0	80
Ilidža	48.291	143,4	337
Ilijaš	15.462	309,0	50
Novi Grad	119.883	47,2	2.540
Novo Sarajevo	73.381	9,9	7.412
Stari Grad	38.000	51,4	739
Trnovo	2.187	338,4	6
Vogošća	20.575	72,0	286
Sarajevo Canton	**410.031**	**1.277,3**	**321**

The number of suburban residents also expresses the population in urban-rural fringes. In this respect Hadžići, Vogošća and Ilijaš have a higher suburban population which can be interpreted that these municipalities might have a more rural character (Table 2).

Table 2. Urban and suburban residents in the municipalities of Sarajevo Canton (2003)

Municipality	Urban	Suburban	Total
Centre	65.750	2.317	68.067
Hadžići	4.707	15.426	20.133
Ilidža	44.907	3.017	47.924
Ilijaš	4.391	10.934	15.325
Novi Grad	116.480	352	116.832
Novo Sarajevo	74.402	0	74.402
Stari Grad	37.466	745	38.211
Trnovo	109	727	836
Vogošća	7.641	12.325	19.966
Sarajevo Canton	**355.853**	**45.843**	**401.696**

Problems

The problems that are typical for rural areas of the Sarajevo Canton can be identified as:

- Continued depopulation of rural areas and migration to the city or around the city,
- The return process as a result of the war is very slow,
- Deteriorated quality of life in rural areas,
- Lacking plans for the use of rural resources,
- Socio-economic analysis of rural areas is almost non-existent.

The existing planning strategies hardly address the social and economic issues in the rural areas in the canton. Generally this area is not defined in agro-ecological and economic terms.

The approach to rural development Sarajevo Canton should consider the positive experience of developed countries, which among other things base the concept of development on the following levels:

1. to support agriculture in areas with severe conditions of management (such as mountainous areas) due to higher production costs per unit of measure, including help in protecting of the landscape in order to keep the population;

2. to help areas that specifically take into account environmental protection, ambient conditions, biodiversity, cultural heritage of the country, encouraging organic farming and maintenance of mountain pastures;
3. to help young people and stimulate their permanent stay in the country through different types of programs to counteract the depopulation process and deliver the vitality of rural areas.

One of the important elements of behaviour in rural areas, which is emphasised in the process of approaching European Union, highlights the best agricultural practices which are supposed to take care of all aspects of environmental protection, human health and animal welfare. The aim is to harmonise rural development with the environment on the following principles:

- Changing pattern of consumption of resources
- Rational use of resources
- Reduction of waste
- Rational use of (renewable) energy
- Preservation of environmental quality
- Biodiversity preservation and enhancing of biodiversity

2.2.3. Objectives for rural Sarajevo

An overall and final goal should be to revitalise and develop rural areas of the Sarajevo Canton. This general objective is closely linked to the achievement of the vision, aspirations and commitment of the Sarajevo Canton to ensure balanced development of rural and urban areas within the Canton, and that of the rural areas of the Sarajevo Canton create a pleasant living environment.

Fulfilment of common or general objectives will be achieved through the implementation of the following three strategic objectives:

1. Social and economic revitalization and development of rural areas of the Sarajevo Canton;
2. Valuation and environment protection and natural environment of rural areas Sarajevo Canton:
3. Improvement of the quality of life in rural areas of the Sarajevo Canton.

The fulfilment and realization of the set goals will come through the implementation of the following priority objectives as shown in the scheme below.

Priority Objective		**Measure**	
1	***The development of productive activities in rural areas of Sarajevo Canton***	1.1	Support for the development of agricultural production
		1.2	Support the development of forestry
		1.3	Support the development of productive activities outside of agriculture and forestry
		1.4	Support the creation of added value for local production (new product development - processing, finishing)
		1.5	Strengthening the capacity to initiate and conduct business activities
2	***Infrastructure Development***	2.1	Support for the development of physical infrastructure
		2.2	Support the development of social infrastructure
		2.3	Support the development of service infrastructure
3	***Development of rural tourism***	3.1	Support for the development of all forms of tourism
		3.2	Support the development of marketing activities for the promotion of all forms of tourism in rural areas
4	***Valuation, protection and enhancement of the rural environment***	4.1	Evaluation and conservation of natural resources
		4.2	Valorisation and preservation of traditional historical and cultural heritage
5	***Establishment of institutional support and ongoing technical assistance for the development of rural areas of Sarajevo Canton***	5.1	Creating information base for the promotion of activities in the field of rural development
		5.2	Support the development of civil initiatives aimed at articulating the needs of the local population
		5.3	Creating institutional basis for rural development
6	***Establishment of regional and international cooperation***	6.1	Establishing regional cooperation
		6.2	Establishing international cooperation

2.3. Introduction to the workshop

Similar to LE:NOTRE Landscape Forums in Antalya and in Rome, Sarajevo Landscape Forum was based on the motto ‘landscape architecture in a changing world; linking education, research and innovative practice’.

Sarajevo, together with the rest of the world, was commemorating several anniversaries in 2014. The Bosnian war between 1992 and 1995 was the 'dark' side of the history that the city and the country suffered. Therefore the multiple meanings which they have been brought into the landscape of this unique European city would make this Forum - 'extraordinary' in more senses than one.

The four established thematic groups, urban growth and peri-urban sprawl, sustainable tourism, heritage and identities and rural fringe, were set up so to prepare a “city biography” as in the previous LE:NOTRE Landscape Forums.

Sarajevo offers an example of unity in diversity, cultures, meanings and landscapes in transition. The city has been the leading political, social and cultural centre of Bosnia and Herzegovina and was dedicated as Jerusalem of Europe due to its traditional cultural and religious diversity. However, the Bosnian war affected the city of Sarajevo and its rural and urban landscapes, heritage and economic activities including tourism in many ways. So it was important to explore the landscapes of Sarajevo and to understand the processes and form of transition in its landscapes from a professional point of view in this changing world.

Aims of the study

The rural group analysed the rural fringe around Sarajevo city to understand the form of transition in rural landscapes. Main questions were: what are the driven forces and factors that are influencing past, recent and future of the rural landscapes on the outskirts of the city.

Preparation for the Workshop

Prior to the LE:NOTRE Landscape Forum local experts raised a series of questions for Sarajevo to be answered throughout process of composing the LE:NOTRE Landscape Monographs “Sarajevo’s Landscape”. Maps, graphics and related publications were available prior to the Forum. The excursions took place in the rural fringe of Petrovici. The first major of the area gave short briefing about the area and rural fringes. Then a number of local farms was visited interviewing farmers about their activities and livelihood in the landscape. Further discussions were continued within the rural group on the rural fringes of Sarajevo, Petrovici and Trebević since there is a need to include these post-conflict landscapes in the political and environmental agenda.

Questions for Rural Sarajevo by *Local Experts* Sanela Klarić, Tamara Bajkuša

In this workshop we explore the possibilities for culture, tourism, agriculture, renewable energy, environment protection and other different leisure and development within by an almost intact swathe of un-built land on the city edge. These green fields and woodlands are reminiscent of a not yet forgotten recent past – with war activities. This area was the front line in the recent war and disconnected from normal life for almost 23 years. After the war the city of Sarajevo has been growing and transforming but still most of those slopes are forgotten. Some slopes are now occupied by private residential buildings but most of the land is still very rural and un-organised. Except for some private agriculture initiatives, there are not many activities (agriculture, tourism, food production, environment protection) taking place in the area.

The working group worked on the following questions. In which way could this "piece of countryside" add to the quality of city life? What are its current uses and trends? How to promote the benefits of this part of the mountain side with its status as a protected area? What does the future hold for this land? What benefits could the city gain? What is the nature and relationships between rural, rural-urban fringe and urban areas on the site; and what could be the implications of links for the sustainability of the particular area?

Questions, challenges and themes might include:

- What can be the role of "environmentally friendly agriculture" and food production in this changing landscape?
- These city slopes have been used as the most popular recreation area close to the city. Is this land destined to again become a landscape of leisure? What kind of leisure does Sarajevo need? What kind of leisure and recreation could this part of the city offer?
- How to use all natural potentials on the land such as forestry, biodiversity, agriculture land, renewable energy? How should we protect this area? Should new uses for existing features be found in order to conserve the cultural landscape?
- Should this land be protected from development? Can urban expansion occur in harmony with cultural, tourism, leisure and environmentally friendly agriculture? Do we need a repair-kit? How could planning connect activities to offer balanced development and lead to entrepreneurship?
- Are planning and design strategies enough to attract alternative forms of diversification of the rural economy here? Could we gain added value from agricultural products that could support citizens' or visitors' needs. Are there alternative forms of agriculture and forestry that can lend meaning and perhaps economic benefit to this land?
- How can all stakeholders become involved in decision making and play a role in improving planning and management; and what could be the challenges that stakeholders will face?

2.3.1. The rural fringe of Sarajevo

Sarajevo is situated in a valley of the river Miljacka, which is formed from the confluence of two smaller rivers the Paljanska Miljacka and the Mokranjska Miljacka. In it upper reaches, the Miljacka river forms an impressive canyon and on the west of the valley lies the Sarajevsko Polje where most of the city is situated today.

In the western part of the city, on the location of Rajlovac Miljacka flowing into river Bosna, as do all the other rivers of the city region. On the southern border of the valley of the Sarajevsko Polje lies Mount Igman and to the north and north-east lies Mount Trebević. Sarajevsko Polje has the average altitude of 510 m above sea level while Mount Trebević has the highest altitude (1629 m), this is followed to the north and northwest by Bukovik (1532 m) and Ozren (1525 m). The valley is formed from the intersection of several rivers coming from the southern and the south-eastern (Željeznica) and from the north-western (Jošanica, Vogošća and Ljubina) sides of the valley (Avdagić et al., 2014).

The landscape structure of Sarajevo City Region has the same characteristics as the rest of the country. The region belongs to the inner Dinaric area, which is characterised by a hilly and mountainous relief broken up with deep canyons (Figure 4). The relief is very varied, with the highest mountains (Treskavica, Bjelašnica) being more than 2000 m above sea level, while the lowest areas lie at approximately 400 m above sea level.

Sedimentary rocks are the prevailing type of geological material in this region. This region is characterised by highly diverse types of bedrock from the Mesozoic, Cenozoic and Paleozoic eras. Paleozoic (Permian) sediments, such as sandstones, shales, and conglomerates, are found in the north, northeast and east of the city region on Mount. Jahorina and Trebević and in the west of the region (western parts of Sarajevsko Polje).

Figure 4. Views from rural Sarajevo (Atik, 2004)

These bedrocks are characteristic for the eastern part of the city and southern slopes of Mount Trebević. Shale sandstones, usually referred to as “verfenic sediments” (Triassic sediments). Higher levels of the mountains are mainly lime stones and dolomites, associated with their

specific karst morphology. The lower slopes and the bottom of these mountains are composed of similar “verfenic sediments” but with a red and purple colour. These materials are extremely erodible and they are usually carried by mountain springs and rivers like Miljacka, Željeznica, Lukavički Stream (potok). Because of red colour of the verfenic sediments, these rivers, during rainy periods, are also coloured red.

Landscape character around Sarajevo is formed by mountains with sharp cliffs, which gives remarkable diversity and beauty to the region. The topography of the region limits further land use development. Rural landscapes are mainly located on the rolling slopes and on the flat outskirts of the mountains. These cliffs consist of Triassic limestone, which lie on top of “verfenic” shales and sediments which can be found mainly in mountain depressions and valleys. Here water resources and springs come from the slopes of the mountains.

A wide diversity of ecosystems, ranging from thermophilous Mediterranean habitats to alpine mountain areas and high interaction between biodiversity and geo-diversity creates a characteristic and vivid image of the landscapes of Bosnia and Herzegovina (Redžić et al., 2008; Avdagić et al., 2014).

2.3.2. Understanding the rural fringe of Sarajevo and Petrovici

Sarajevo is situated in a valley create by Miljacka River and surrounded by Trebević Mountain. Petrovici is one of the localities in rural fringes around Sarajevo City Region. Water courses, Miljacka River in particular shape the structure and spatial composition of the rural fringe of Sarajevo (Figure 5).

Petrovici, a village located in the municipality of Novo Sarajevo was chosen as a case study area for the rural fringe group. The area lies around 750 meters above sea-level on a quite hilly topography surrounded by mountains. The goal was the improvement of quality of life and for maintaining sustainable development of its landscapes.

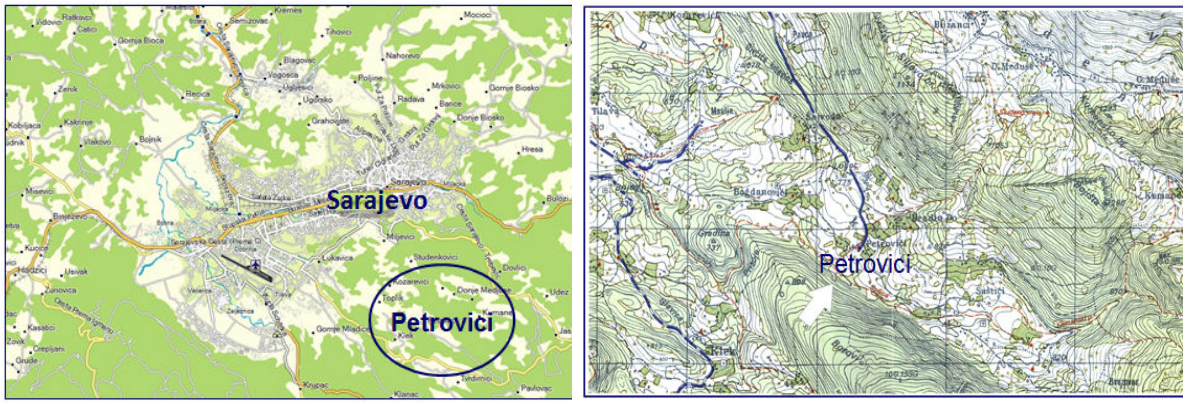

Figure 5. Rural fringe around Sarajevo and Petrovici

Vegetation Characteristics

Vegetation characteristics in and around Sarajevo can be described as temperate deciduous forest. They are often composed of different vegetation as defined by Avdagić et al. (2014):

- Degraded oak forests, hornbeam, ash and hazel (Carpino betuli-Quercetum roboris) which can be found in the valley of Sarajevsko Polje and on low hilly relief.
- Beech forests (Forests of Mountain beech), which are also mainly degraded forest.
- Mixed beech and fir (with spruce) forests (Abieti-Fagetum)

Land Use Patterns in the Rural Fringe

The land use of the city region consists mainly of forests, followed by arable land, meadows and cultivated land. However cultivated lands (9.589 hectares) as well as arable land (14.498 hectares) used for agricultural production and pastures (5.645 hectares) (Avdagić et al., 2014) is an important element of rural life around Sarajevo.

The main driving factor for the changes of the area of forest and shrub vegetation does not origin from a need to have more agricultural land, but might be the result of other conflicting interests of land use, such as urban development.

Understanding Rural Fringe Sarajevo through the Eye of Petrovici

To understand the rural fringe as a marginalised space, the Rural Group visited the Petrovici locality in order to get a better insight in the different faces of the rural fringe of Sarajevo. Site observation helps to identify landscape character, personal interests and opportunities (Figure 6).

Figure 6. Site Observations of Rural Petrovici (Atik, 2014)

Visual analysis of landscape enables to analyse key aspects of landscape characters. It showed that the rural fringe of Sarajevo offers a well defined green buffer with an ecological network and opportunities for food production and nature conservation on the edge of Sarajevo city (Figure 7).

Figure 7. View of Rural Sarajevo from Petrovici (Atik, 2014)

State management and decision making can play an important role in shaping the rural fringe. A clear rural policy and legislation is beneficiary for an integrated management of the rural fringes. Because they are transition zones between cities and nature, fringe belts are more sensitive to social, cultural, economic and political interventions in the landscape.

The site visit included meeting the local major of Petrovici and a number of local farmers. The group visited a rabbit farm, a goat farm for milk, a farm with cow for meat production, and a farm with chicken and chicks (Figure 8).

Figure 8. Site Visit; Meeting Local Experts, Mayor and Farmers (Atik, 2014)

The local farmers receive very little support for their activities. A few agricultural cooperations are acting at local level and are trying to work with the farmers. However local farmers produce only a limited number of products, such as goat meat, beef, cow milk, mutton or sheep milk. Farmers generally have one main product for stock farming and besides this they grow small amounts of vegetables and fruits for domestic needs. In the goat farm the goats are kept for 3 years for the production of milk and used for meat production afterwards, while cows are raised during 2-3 years for meat production (Figure 9).

Figure 9. Examples of live stock farming; milk goat and cows for meat production (LLF 2014 Sarajevo, 2014)

There are full time farmers and part-time farmers. Some of the latter work at office during day time and after work hours and in the weekends work on the farm. Each farmer in the area has different products: goat, sheep, beef, vegetables, fruits, etcetera. These small farms in a large scale rural fringe diversify the land use pattern, but may not be sustainable in the long run.

There is one traditional farm with diverse agricultural products which is almost the biggest producer near Petrovici, but even this farm has a limited scale due to labour need and expenses. They produce beef, eggs, chicks and pigs (Figure 10). The farm grows barley for human consumption and corn both for animal fodder (in silos) and human consumption.

Family-run farming business in the region seems at risk due to the neglected policy on agriculture. Young people find farming risky and agriculture labour too hard and difficult. Therefore few families will probably continue their family farms and to will not hand over local knowledge for the future. However there are opportunities for growing organic food and to produce for local markets.

Figure 10. Examples of stock farming; chicken and rabbit (LLF 2014 Sarajevo, 2014)

2.3.3. Characteristics of rural Petrovici

Farming is an essential component of landscape characters in rural fringes, including Petrovici and indicating the transition between urban and rural and specificity of the rural fringe of Sarajevo (Figure 11). Vernacular elements such as hedges, hay stacks as a way storing food for animals are special features unique to Petrovici (Figure 12). Such elements help to recognise the link between rural and urban and to understand its potentials from different perspectives.

At the edge of Sarajevo, the Petrovici area provides a close link to the countryside with green fields, forest and access to the nature. Variety of land use in small scale family-run farms, orchards, fields and terraces are some of the unique characteristics of Petrovici (Figure 13). Land use patterns consist of individual agricultural plots and small-scale farms run by the rural population. Local houses and other vernacular buildings form an important part of rural landscape characters including terraces, hedges and garden elements.

Figure 11. Rural Sarajevo, South Side of Mount. Trebević South and the Petrovici area

Figure 12. Land use patterns of the Petrovici area (Atík, 2014)

Figure 13. Rural building types of the Petrovici area (Atík, 2014)

2.3.4. Workshop process

The rural team discussed factors influencing land use, potentials and difficulties with pros and cons within the frame of a SWOT analysis for Petrovici and the wider rural fringe of Sarajevo (Figure 14 and Figure 15; Table 3).

Main goal was to understand rural fringes of Sarajevo in the case of Petrovici area and define characteristics, problems and opportunities. Special focus was put on how to re-vitalise economy and sustain local life styles and livelihood on sustainable development. Local experts provided data about ongoing discourse in the periphery of Sarajevo and how rural landscapes are managed.

Figure 14. Rural team working during the Sarajevo Forum (Atik, 2014)

Figure 15. Rural Team working during the Sarajevo Forum (LLF 2014 Sarajevo, 2014)

Characteristic of rural Sarajevo

There are different ways of evaluating rural characters in the landscape. The main character consists of the land use patterns and visibility of agricultural activities. During the site visit and workshop the rural characteristics of Sarajevo are presented in Table 3. This evaluation is based on McClelland and Keller (1999) and NPS (2014) and main landscape characteristics around Sarajevo city and its rural fringes.

Table 3. Evaluation of rural characters of Sarajevo

Rural Characteristics	Sarajevo; Rural Fringe Petrovici
Land Uses and Activities	Forests, small scale agricultural activities, nested houses, patches of farming plots.
Patterns of Spatial Organization	Major biophysical components of rural fringe of Sarajevo are the mountainous topography divided by deep and sharp cut valleys. Settlements are located along the valleys and main rivers where water is available and land is reasonably easy to settle.
Response to the Natural Environment construction of houses, barns, fences, bridges, roads, and community buildings.	Mountains open and presumably grazing fields, valleys and water courses are major features as a response to natural environment.
Cultural Traditions	Although it is not strongly visible, nested settlements and circulation networks in-between, And dense forest cover
Boundary Demarcations	In most cases boundary demarcation seem to indicate lands belong to state with fences where public and private lands are divided by natural and vernacular boundaries.
Vegetation Related to Land Use	Vegetation in and particularly around Sarajevo can be defined as Beech forests and degraded oak forests consisting of deciduous trees and mixed forests of beech, fir and spruce.
Buildings, Structures and Objects	Rural houses, abandoned buildings, traditional boundaries.
Clusters	It is difficult to define strong clusters or farmstead but, nested houses with surrounded gardens and fields are the visible clusters.
Small-scale elements	Fences, boundary elements and some vernacular buildings are characteristic elements reflecting rural land use traditions.

SWOT-analysis for the rural fringe

The rural fringe of Sarajevo possesses advantages for sustainable development but there are also threats and weaknesses (Table 4). Accessibility around urban Sarajevo is well provided in reasonable distances. Proximity to the city can also caused degradation in long run by urban sprawl into rural settings.

Rural fringes are appreciated with their unpolluted, clean air as open sanatoriums. This creates attraction for tourism with its nature and as well as traditional buildings and local landscapes. But migration from rural areas empties the villages and degrades the sustaining rural characters. However mine fields from war time still remain in some location and this is a great concern for local inhabitants as well as visitors in the area. Confusion about ownership hampers people from starting long term investment on the land.

Table 4. SWOT-analysis for the rural fringe of Sarajevo

From inside – Municipality and Region **Strengths**	**Weaknesses**
- Accessibility City <-> Village - Short distance to City (market for local products (incl. restaurants) - Natural resources and landscape potential - Part time farming for landscape management - Renewable energy resources - Unpolluted, clean environment - Perception of the positive past experiences (recreation, feeling of belonging) - Fresh air 'sanatorium'	- Proximity to city - Problem of daily migration - Part time farming - Missing waste management - Lack of sustainable cooperation, advisory/education - Lack of building legislation + planning/plans in some locations(cross entity issues) - Confusion about ownership, missing cadastre - Mine fields - Perception of negative past experiences (war time, safety issues) - Lack of stakeholder involvement
From Outside **Opportunities**	**Threats**
- Tourist interest - Accession to EU and EU initiatives - Young migration back to the village - Rising interest in local and organic food and fair trade - Innovation (e.g. modern communication technologies) - Regional cooperation - Traditional building style and local material - Availability of good soils for agricultural activities	- Permanent migration of young people from the village - Change of lifestyles - Disconnection from values and traditions - Urban sprawl and new districts (mahallas)

2.4. The case of Mount Trebević: a valued or an abandoned heritage

Trebević is a mountain area just located on outskirts of Sarajevo, southeast of the city (Figure 16). Trebević is 1627 meters (5338 ft) high, making it the second of the Sarajevo Mountains which was used for a number of Olympic events.

Figure 16. Rural Fringe of Trebević

2.4.1. Trebević as natural heritage

Geological and geomorphological characteristics

Trebević Mountain consists almost entirely of sedimentary formations Triassic, with nearly all stratigraphic members of the periods (Lower, Middle and Upper Triassic). In the area of Federation of BIH Miocene sediments occur, mainly showing in the urban area of Sarajevo. Although the Quaternary formations are represented at a marginal level, it is worthwhile to emphasise their importance in the construction of the space in stratigraphic and morphological terms. This fact is especially emphasised, given the specificity of the frequent occurrence of contemporary geomorphological processes that take place within the stratigraphically older areas (Triassic, Miocene), which includes sliding process, erosion, and accumulation processes.

Biogeographical characteristic

The area of Mountain Trebević has a 140-180 days the vegetation period. Average annual air temperature ranges from 12 - 21 ° C with the average temperature in January 1-2 ° C and 21 - 22 ° C in July. The average annual relative humidity is 75%, and the average annual rainfall around 1,000 mm. The area is located at 500 -2386 meters above sea level, with higher ranges from 1000 to 1600 m. The geological base consists of limestone mountain ranges. Continental and mountain climate is dominant in the area.

Characteristics of the flora

Mount Trebević on the northern slopes is characterised by coniferous forests, (mainly spruce) and deciduous forests on southern slopes (Figure 16). Also, there are many silver pine forests which are a result of anthropogenic influences. There was also an initiative to establish a botanic garden on Mount Trebević by a group of scientists from National Museum of Bosnia and Herzegovina (Gligić, 1953). For this reason, on many locations on Mount Trebević there is much allochthonous vegetation like cultures of *Picea omorika, Larix decidua, Pinus heldreichi,* and many different shrubs and flora are brought from all over the country. Different examples of vegetation structures are given in Figure 17, from Mount. Trebević south side. The area has a characteristic vegetation of the Dinarides with:

- Thermophilus beech forests (Seslerio - Fagetum, Ostryo - Fagetum Acer obtusati - Fagetum);
- Forests of oak and hornbeam (Querco - Ostryetum carpinifoliae) or woods of hornbeam (Orno - Ostryetum);
- Forests of fir and spruce (Abieti - Piceetum);
- Forests of beech and fir with spruce (Picea - Abieti - Fagetum);
- Vegetation complexes of hornbeam (oak and hornbeam; Querco - Ostryetum carpinifoliae) with phytocenoses of rocks and rock creeps (*Asplenietea rupestris (trichomanes), Thlaspietea rotundifoli*).

The southern parts of this mountain have been always inhabited and the land was cultivated for the agricultural and livestock production. The northern parts were mainly used as forest, although many of the northern mountain slopes have become built up over the past 20 years due to urbanisation.

Figure 17. Rural Sarajevo, Mount. Trebević South side (LLF 2014 Sarajevo, 2014)

Characteristics of the fauna

Various large and small mammals inhabit the area of Trebević. The main species of wildlife are: roe deer (*Capreolus capreolus*), wild boar (*Sus scrofa*), hare (*Lepus europaeus*), wolf (*Canis lupus*), fox (*Vulpes vulpes*), wild cat (*Felis silvestris*), badger (*Meles meles*). Besides this some small mammals such as the mouse and the dormouse, and occasionally the brown bear Ursus arctos. The area abounds with many bird species as well as amphibians and reptiles, of which a large number are protected and listed in the NATURA 2000 (European Commission, 2013) regulations.

Ecosystem characteristics

In the Austro - Hungarian monarchy period, the area of Trebević represented an area without trees, with the dominant meadow and rocky vegetation. Through projects of artificial entries of dendroflora to the area significantly changed its indigenous flora. The process of planting of forest stands (mainly coniferous) continued during the twentieth century, especially after 1945.

Today the area is characterised by the dominance of coniferous species, but a diversity of deciduous, coniferous and mix forest is evident (Fig. 18). Here, extremely large number of species is seen with Pinus sylvestris (L.) H. Karst. and Abies alba Mill., which forms their forests with the dominance of spruce in the northern and southern slopes of the area. Within these forests, in the area of "Tabacke ravni" stands of endemic species of spruce Picea omorika (Pancic) is recorded.

Figure 18. Vegetation characteristics in Sarajevo (Belcakova, 2014)

In this area, in addition to the aforementioned value, are a large number of species of lichens such as *Cetraria islandica* (L.) Ach. - Iceland moss, in rather large amounts, as well as species of the genera *Lobaria* (Schreb.) Hoffm., *Palmeria* Ach., *Usenea* Adans. Besides lichens, the area is rich in a great variety of species of mosses and fungi. Moss is very well developed in almost all parts of the area with the highest percentage of humidity, in shadow habitats such as rocks in the woods or next to the streams. Constant humidity fed numerous streams and an abundance of organic matter in the process of putrefaction enabled the development of entire populations of fungi, both poisonous and edible.

The meadow ecosystem is very vulnerable because of the constant succession that occurs rapidly. It is evident that these ecosystems are rapidly disappearing under the pressure of tree and shrubby vegetation and slowly develop into the forests of fir and spruce. The negative trend in the disappearance of these ecosystems, whose value is recognised by the Natura 2000 must be prevented by active control of the habitat.

2.4.2. Trebević as a cultural historical heritage

No one knows the exact origin for the name of mountain Trebević, but it is assumed that the area of this mountain was once an altar dedicated to the Slavic pantheon of gods, used for offering sacrifices to some of the Slavic gods – probably Perun; and because of that use of the area it is believed that the name comes from the word “trebeviste” which in local language means “to clean and destroy”.

However, there are indications that the ritual of sacrifice appeared before, in Illyrian times when they sacrificed animals in numerous sinkholes near the top of the mountain. During the old ages slopes of these mountains were inhabited by the Illyrians who founded a settlement in what is now Debelo Brdo. After the ancient period, the importance of Trebević in the Middle Ages decreases, while during the period of the Ottoman Empire is growing thanks to the increased urbanization on its northern slopes.

During the Austro - Hungarian rule the importance of Trebević was growing rapidly, especially for the military aspect, because the whole city provides an overview from the slopes of the mountain. Because of that, in certain spots fortification such as Bistrik Kula and others were built, whose remains are visible today, In addition to the military significance, the importance of Trebević as a recreational area was growing as well, which is why the process of afforestation of the area begun, as well as the construction of trails for pedestrians and hikers, for the purpose of introduction of tourism.

During the period of the Kingdom of Yugoslavia, the importance of Trebević as a recreational area increases with the establishment of the first mountaineering companies in Sarajevo, which was followed by the construction of numerous mountain huts. In the area of Trebević there was a mountain lodge "Ravne" built in 1932 and renovated in 1945 and 1952. The lodge offered 6 rooms and 20 beds, water supply system, electric lighting, as well as a variety of dishes.

After World War II the renovation of existing ones began on, as well as the construction of new tourist facilities on Trebević. For easier access, a cable car was built, from the city center to the area of viewpoint, which had a restaurant and a bar. The next phase was the construction of walking trails as well as new mountain lodges and resorts that were destroyed in the war 1992 - 1995 Trebević was the proud host of bobsleigh and sledging from around the world during the XIV Olympic Winter Games that were held in Sarajevo in 1984, and as a sports facility remained registered in the books of the International Olympic Committee.

In the Spatial plan of the Sarajevo Canton there are three historical - memorial monuments mentioned in the area of Trebević. The Astronomical Observatory "Colina kapa", the Fortress "Gradac" and the archaeological site Mocila. In addition, the master plan proposes to include and record the location (point) of fire points from the period of siege of the city in the form of a single historical - memorial monument with a special program of evaluating events and places from the last war (1992 - 1995).

2.5. Rural fringe of Sarajevo; a neglected landscape

2.5.1. Land Tenure Issues (Williams, 2013)

The overwhelming majority of rural landholdings in Bosnia (about 90 percent) remained in private hands by the time of the 1992–1995 conflict. Early attempts at forced collectivisation were abandoned in the face of rural unrest and hunger, and nationalisation of private land beyond the ten hectare agrarian maximum yielded little due to the effects of prior land reform and natural fragmentation under Bosnian inheritance law. What land did fall to the state eventually became socially owned and was made available to large agricultural combines, which monopolised virtually all government agricultural programs and subsidies.

The situation immediately prior to the 1992–1995 hostilities was already characterised by the effects of chronic mismanagement of land resources. Fragmentation of rural land plots combined with policies discouraging commercial agriculture had led to both the loss of farming skills and degradation of land and rural infrastructure through a long-term lack of investment.

The key development questions surrounding land in post-conflict Bosnia had more to do with unlocking long-suppressed potential than with resolving burning disputes. For land tenure reform in Bosnia, the fact that the country is in transition from socialism to capitalism is just as important as the fact that there was a war.

After the conflict, rural land remained locked in a network of small and fractured subsistence plots that were often hoarded and left fallow, rather than put to productive use through active sales and lease markets.

From the earliest days of the return process, it was clear that simply restoring rights to and possession of land would not automatically foster sustainable return. For rural returnees, the effects of the conflict posed significant sustainability issues, particularly when agricultural land they depended on for subsistence was contaminated by landmines.

Although post-conflict Bosnia has seen significant returns to rural areas, the conflict almost undoubtedly accelerated a process of urbanisation that had gathered pace before the conflict as peasant-workers moved from remote farms to informal peri-urban settlements. The most notable post-conflict example involved free allocation of construction land that included occupying properties, such as grazing land.

The decision annulled, retroactively to the outbreak of the conflict, all allocation decisions related to socially owned land previously "used for residential, religious or cultural purposes, or for private agricultural or business activities". This decision left a great deal of undeveloped land at the edges of cities and towns and on the premises of socially owned agricultural combines available for legal allocation and resettlement.

Predictably enough in light of the difficulties in upgrading pre-conflict peri-urban settlements, very few plots had been provided with electrical, water, and sewage connections; access roads remained poor and sometimes impassable; and residents enjoyed little access to medical care, schools, refuse collection, and other social services.

As late as the end of 2010, Bosnia's legal framework for agriculture and rural development remained incomplete (Commission of the European Communities 2010 in Williams, 2007; *Post conflict land tenure issues in Bosnia: Privatization and the politics of reintegrating the displaced)*.

2.5. 2. Why is this is a neglected landscape?

The nature of the rural-urban fringe is influenced by four main factors: agricultural policy, regional planning, the urban economy and the agricultural economy (Geocases, 2014). However, the character of the rural-urban fringe in Sarajevo was influenced by different processes. The Bosnian war and the Siege of Sarajevo greatly impacted its history and landscapes.

Baker et al. (1996) open a discussion on the nature of the rural-urban fringe and raised a question what the characteristics of these zones are; disturbed landscapes, neglected landscapes, simplified landscapes or valued landscapes. Sarajevo is a post conflict area and social, political, economic and environmental consequences are evident in different merits. The rural fringe of Sarajevo can be evaluated as a neglected landscape. It is disturbed by the memories and experience of the Bosnian war. Many people have died and many have to leave the area. So there was an extensive drift from rural areas for safer places. The nature of the landscape has changed from cultural into semi-natural and natural by the overgrowing forest trees. Most of the natural character was simplified into only mountains and forests.

Due to the widespread availability of landmines in conflict affected settings, and their ability to exert powerful control over space, mines can be intentionally used in land disputes. In Bosnia and Herzegovina, mines were laid after the end of the war to prevent or intimidate population from returning to specific areas (Unruh and Corriveau-Bourque, 2011).

There can be a significant connection between physical capital and post-conflict rural land tenure. The status of transportation infrastructure (destruction, neglect, or as 'off limits' due to

landmine and military/militia presence) and its effects on marketing of agricultural produce become enormous (Unruh, 2008).

In case of conflict zones not only people but also economic activities move into safer urban sector by the shifting production from rural to urban. Rural life, communities and production in rural fringes of Sarajevo reduced greatly.

Bosnia and Herzegovina does not have a clearly identifies agricultural policy, and the sector of agriculture and rural development is not treated as a strategic branch important for development of overall economy in the country (Green Council, 2013). Local farmers and local production do not receive enough incentives.

It is not the urban development yet that pressures the rural fringes in Sarajevo but the nature of the transition after the post conflict. Decreasing rural population, inadequate infrastructure and low income rural economy are the major issues to be dealt with.

2.5.3. Trebević as a post-conflict landscape

Memory, Controversy, Romantised, Past Lifestyles and Ruined Structures, Renewal

Disentangling the relationship between conflict and economic outcomes generates knowledge essential to breaking a cycle of conflicts. During conflicts land use patterns change as a result of modifications to agricultural production choices, causing producers to move into the urban sector by the displacement of production from the countryside to urban areas during periods of conflict (Alix-Garcia, 2012).

Unruh (2008) reported that population dislocation during and after war encompasses financial, physical, human, social and natural capitals. The evidence shows abandonment of the countryside for urban areas, re-growth of vegetation in rural areas, and a decrease in vegetation density closer to cities which is associated with more intensive land uses (Alix-Garcia, 2012) effects the landscape in the face of conflict situations.

During the 1992-1995 war, the town's housing developments were destroyed to a large extent, a large number of public buildings and cultural heritage buildings were damaged, the vegetation in the town and surrounding areas was seriously damaged and numerous natural recreation areas were made inaccessible in Sarajevo (Neidhardt, 2007).

On the other hand Trebević and the urban life in Sarajevo are interlinked in physical, historical and cultural aspect. It contains elements that define history of civilization in Sarajevo such as cemeteries, symbols of urban leisure or such as the Olympic grounds as embodiment of highest historical and cultural values.

This link has been interrupted since 1992; since the siege of Sarajevo, and generations of young people did not have the opportunity to experience the benefits of Trebević. Most of these once iconic sites are no longer a part of city life. But here lies an opportunity to tap into this potential as a tourist interest point but also to provide these functions for local residents.

According to Idrizbegović-Zgonić (2014) Trebević has become partly a forgotten feature of the city of Sarajevo. It is surprising that Trebević area is imbedded with the collective memory of

Sarajevo people and imbedded with heritage, but different kinds of heritage. Especially during the Bosnian war heritage has become a complicated issue, because heritage often relates to specific activities, (ethnic) groups or people.

Heritage belongs to certain role, group, ethnic group or certain people. However, the heritage in Trebević is a common heritage, it is everybody's heritage. It is the cable car, the bobsleigh, Belvedere restaurant, TV rally. It is not a kind of heritage that is attributed to the historical, religious and identical heritage, these are all symbols of the post-urban life in Sarajevo. It is evident that these urban elements or beacons have been forgotten in Sarajevo. Most of them don't work, they are neglected. They are in need of intervention (Idrizbegović-Zgonić, 2014).

Other examples of heritage that represent civil interventions are the hydropower plants on the banks of Trebević, which is a national monument, and an astronomical observatory.

Trebević is full of identity and memory but not in a classical sense, since there is a lot of controversy. Because it was a war front line and even today it also divides parts of Sarajevo and Republic of Sirpsa Sarajevo. It has been romantised in the life styles of the generations of this generation. It is a kind of romantic ruin, a romantic structure. What would be the question for the regions is that people from inside and people from outside need to have objective for Trebević (Idrizbegović-Zgonić, 2014).

In post conflict areas or cities, a core issue becomes sustainability and stability of the environment and economy. Pozder (2014) confirmed that post conflict city of Sarajevo and whole country suffered from the war. A large area with uncontrolled wood cutting, not only for heating but also for opening up battle fields, and a lot of fires during the bombing caused degradation of the city's environment and created a new kind of pollution. Sustainable development, for instance by sustainable tourism is important for stable employment and diminishing poverty (Pozder, 2014).

Heritage and landscape are interrelated. Landscapes of conflict and reconstruction after the conflict (Libbrecht, 2014) are the key aspects for both Sarajevo and Trebević. This should go hand in hand with the reconstruction of the city. Although housing and dwelling are the most important issues after the conflict, still restoring the agricultural land is equally important.

Current status

In the area of Trebević there are two important buildings: the mountain home of the Croatian Cultural Society "Napredak" and the home of the Ski Club "Sirokaca" on Tabacka ravan. The pre-war buildings restaurant Vidikovac and the mountain home "Prvi Sumar" are in ruins and in need of complete restoration. The cable car is also completely devastated.

The main road in the area connects Sarajevo with Jahorina. In the area of Ravne it connects the viewpoint, bobsled track, the mountain home "Napredak". Most of the secondary roads are due to lack of maintenance in bad condition. The road to "Napredak" is newly paved and in good condition.

In the area there are several larger and smaller paved and unpaved parking lots. In front of the restaurant "Viewpoint" and the former docks of Trebević cable car there is a large parking lot that is in poor condition. In front of the home "Napredak" there is a parking for guests that is unpaved, but sprinkled with sand. In addition to numerous facilities along the bobsled track there is parking and a smaller parking spaces, which together with the bobsled track is abandoned and in a very poor condition due to non-use and non-scheduled maintenance. Within the area there is no branched plumbing - sewage network.

2.6. Opportunity for sustainable development

Sustainable Development stands for meeting the needs of present generations without jeopardizing the ability of futures generations to meet their own needs. It aims a better quality of life for everyone and offers a vision of progress that integrates immediate and longer-term objectives, local and global action, and regards social, economic and environmental issues as inseparable and interdependent components of human progress (European Commission, 2014).

Urban fringes are multi-functional in contrast to the mono-industrial character of the rural countryside that developed following the Second World War (Gilhespy, 2013). Gallent et al. (2004 suggest that the key attributes of the rural-urban fringe are as follows:

- a multi-functional environment, but often characterised by essential service functions;
- a dynamic environment, characterised by adaptation and conversion between uses;
- a low-density economic activity including retail, industry, distribution and warehousing;
- an untidy landscape, potentially rich in wildlife (in Scott and Collier, 2014).

According to The Sarajevo Experiences in Sarajevo Canton and challenges in the development planning an outline for a strategic development was designed. Strategic development commitments/ orientation in Sarajevo Canton were determined by the basic development documents:

- Sarajevo Canton Development Strategy until 2015 (1999),
- Urban Plan of the City of Sarajevo for Urban Area of Sarajevo for the period from 1986 to 2015 (1999),
- Spatial Plan of Sarajevo Canton for the period from 2003 to 2023,
- Canton Environmental Action Plan (2006).

The main approach to development is holistic: development is considered in social, economies, environmental and spatial aspect in the aspect of sustainability (Fetahagić, 2010).

One of the planning process refers to sustainable spatial development and providing infrastructural preconditions for economically more efficient use of land (balancing the spatial capacities for urban and rural development, polycentric system of development of the Canton, sanitation of unlicensed construction, improvement of quality of housing construction, etc.), insisting on maximum protection of natural resources and cultural heritage (Fetahagić, 2010).

Sustanable development is based three pillars; economic viability, environmental protection and social welfare. Rural fringes of Sarajevo offer great opportunities for agriculture, urban economy and regional development. Proximity to the Sarajevo City, clean and abundant water sources, large arable lands, easy access for the market are the advantages rural fringes hold. Cultivation practices such as animal traction, breeding techniques, equipment and tool used, cultivation techniques, organisation of the land are local knowledge that can play great role in sustainable development (CEMAT, 2003). The values of the rural fringes can be assessed in different terms:

- **Aesthetic value** Rural landscapes are mainly located on the rolling slopes or/and on the flat outskirts of the mountains. With regard to landscape diversity, rolling topography and changing land cover elements of forest, farming lots and clusters of small settlements create characteristic of rural fringes which in a sense form a green extension of Sarajevo City.
- **Ecological value** A wide diversity of ecosystems, ranging from thermophilous Mediterranean habitats to alpine mountain areas together with deciduous pine, deciduous and mix forest of native vegetation are the ecological values of the rural fringes. These cliffs are made from Triassic limestone, which lie on top of “verfenic” shales and sediments represent geological diversity in mountain depressions and valleys.
- **Historical value** Bosnian war history has brought rather a complicated value of sad memories. Of the rural fringes of Sarajevo, Petrovici and Trebević areas are discussed in the course of post-conflict rural landscapes which become the negligence of the political and environmental agenda. Mount Trebević was dedicated with three historical -memorial monuments in the spatial plan of Sarajevo Canton; Astronomical Observatory "Colina kapa", and Fortress "Gradac" and archaeological site Mocila.
- **Cultural value** The cultural is rather based on traditions, architecture, local knowledge etc. regarding to rural fringes cultural value can be found in the agrarian landscapes with open fields, hedgerows, terraces, vineyards and/or rural landscapes with architectural and vernacular elements such as farmhouses, village houses, walls and boundary elements.

Key Issues for Rural Fringe, Sarajevo

Rural fringes are:

- Hoards of biodiversity as they are the transition zones between urban and rural;
- They are stable regarding to fast changing urban landscapes;
- They are aesthetic and offer recreation facilities for urban populations and visitors;
- They are the hubs of production and reproduction.

Key issues for sustainable development of rural fringe Sarajevo can be:

Re-linkage of agriculture systems and biodiversity;

Re-coupling of geo-physical variation ad agricultural production;

Re-coupling of agricultural economics and local rural economy;

Re-coupling of livestock production from fodder supply and manure deposition;

Re-connection of the farming community with the wider rural community.

2.6.1. Mountain Trebević as a Rural Fringe

The area of Mountain Trebević has always been an inspiration for poets, painters, but also for citizens and visitors of the city of Sarajevo. Its sudden rise above the city and development of old Sarajevo quarters (mahallas) on its slopes is a remarkable harmony of urban and natural. The mere proximity of the Trebević to the city, and a mild climate and clean air offers almost perfect conditions for schools in the nature and organization of summer and winter camps for training, which would offer education to young people about the importance of nature in the society.

Trebević has long been a flagship resort of the citizens of Sarajevo. The proximity and accessibility enabled it to grow into a big resort. The favourable geographical position, altitude, mild climate and natural beauty made it very popular with nature lovers in the time Austro-Hungarian monarchy, who first recognised the potential of the area and started to modify it into local area for field trips. This trend continued until World War II and resumed after 1945, especially after the construction of the Trebević cable car.

The highlight of the development Trebević reached during the XIV Olympic Games in Sarajevo when many tourists, celebrities and athletes from all over the world visited the site. The development of Trebević abruptly stopped in 1992, and after the conflict it remained known as mined area that is extremely dangerous to visit.

During the Bosnian war and the Siege of Sarajevo the Trebević took on a darker role as its elevations proved ideal positions for besieging artillery and the mountain became a key fighting ground.

Because Trebević largely has undergone heavy fighting during the early 1990s, there are still land mines to be to be cleared out. However numerous hotels, mountaineering huts, and other such structures on Trebević and the surrounding area are available for tourism.

The completion of the facilities was an opportunity for the re-opening of this beautiful mountain to the citizens of Sarajevo. The number of visitors to the mountain (mostly hikers) is growing, but after the construction of the Trebević cable car more visitors are expected.

Guidelines for the management of Trebević

According to Article 27 of the Law on Institutions ("Official Gazette of BiH" no., 6/92, 8/93 and 13/94), Article 241 of the Law on Environmental Protection (Official Gazette of BiH", No. 66713) and Article 26 of the Rules of Cantonal public institutions for protected nature areas. The Steering Board of the Cantonal Public institutions for protected natural areas at the fourth meeting held on 18th of April 2014 adopted temporary management guidelines (see box).

"Temporary management guidelines for the protected landscape Trebević"

The establishment of protected landscape "Trebević" has a purpose of:

- Preserving and improving all elements of the physical and biological diversity in the area;
- Removing and preventing the exploitation and activities which may lead to changes and damage of the nature;
- Development and improvement of ecotourism potential of the Old Town of Sarajevo Canton on the level of organised and planned tourist visits that have sports - recreational and educational character, and which, at the same time involve cultural elements of the area;
- Active participation of local people in maintaining and improving the functioning of protected area and its continuous sustainable development in the function the local community.

The objectives of management of protected landscape "Trebević"

Protecting areas in category "Protected Landscape" was proposed with the following objectives:

- Maintain the harmonious interaction of nature and culture through the protection of the landscape and traditional land use, construction, and social, recreational and sports events;
- Carrying out economic activities in harmony with nature and the preservation of the cultural system communities;
- Maintain the diversity of landscape and habitat, related species and ecosystems;
- Elimination and prevention of land use and activities that are inconsistent with the objectives management,
- Facilitate recreation and tourism appropriate to the category area;
- Encouragement of scientific and educational activities for the benefit of the population for a longer period
- Protection of special cultural sites.

The set objectives are in line with the objectives defined by the Law on Nature Protection and control objectives defined by the IUCN in this category.

2.6.2. Challenges and models for rural development

2.6.2.1. Rural tourism and ecotourism

Ecotourism and rural tourism in recent years are linked to the model of sustainable rural development in many areas. In order to ensure ecotourism and rural tourism development, it is necessary to provide a basic infrastructure in the area, as well as accommodation facilities for visitors. Rural tourism is related to the conservation of biological and cultural diversity through ecosystem protection, promotion of sustainable use of resources by ensuring employment of the local population, the division of the socio-economic benefits with local communities and indigenous people by involving them in the process of managing the activity of eco and rural tourism.

The importance for tourism in general concerns:

- Expansion of the existing tourism offer,
- Extension of the seasonal character of tourism and becoming a whole year business,
- Using of all existing resources,
- The creation of comprehensive and innovative tourism product,
- Rest and recreation in a clean environment.

Two examples of eco and rural villages are the permaculture farm in Vukomeričke Gorice in Croatia and the Rastik village in Bosnia and Herzegovina. Both eco villages unite principles of exploitation of renewable resources and organic agriculture based on the ideals of imitation of the cycles of nature.

A study in village Rastik shows a model of rural revitalization with permaculture principles based on agriculture and animal husbandry in order to help the refugee population to return. Results of the study indicated that full sustainability of 13 households that were in the area was achievable in a five year period with an initial investment, which is likely to return profitability creating a turnover following year (Figure 19).

Figure 19. Village Rastik in BH and a permaculture farm in Croatia

2.6.2.2. Examples of good practices

TAL (Traditional agricultural landscape structures) in Slovakia

Today increasing urbanisation, depopulation and abandonment of land threaten the existence of traditional agricultural landscapes (TAL) in Slovakia. These rural landscapes represent a mosaic of small arable fields with regional agricultural characteristics. They consist of traditional landscapes with natural and cultural diversity related to traditional meadow-pasture landscapes, traditional orchards and vineyards, landscapes with traditional dispersed settlements and traditional architecture, landscapes with historical structures (farm buildings, water mills, vernacular architecture, cultural mosaics, traditional mining landscapes).

In Slovakia a research mapped three preserved Traditional Agricultural Landscapes, their distribution, land use and land cover (Corine) and the comparison of former and current landscape patterns. Their overall share in the country varies from 11% to 50% of the total area of agricultural land.

The following classes of Traditional Agricultural Landscape (TAL) are based on land use classification: (1) TAL with dispersed settlements, (2) TAL of Vineyards, (3) TAL of arable-land, grasslands and orchards, and (4) TAL of arable-land and grasslands.

In regions with sloping areas the preserved TAL-s are forming terraces that resemble traditional agricultural landscapes which are characteristic in the Mediterranean region and in other parts of Europe. Small rare and valuable remnants of TAL are surrounded by intensive

farmland or forests and they form areas with high biodiversity around parcels of agricultural borders.

This research in Slovakia focused on the spatial distribution and detailed classification of agricultural land use. The mapping of natural and cultural heritage determined current activities of the society and land-use which are related to fragmented agricultural patterns, typical of traditional agricultural landscape (land use) and natural and cultivated artificial objects like arable land and permanent crops (land cover). The mapping is based on the data of historical records, field mapping of individual plots, cadastral records, the system of land cover and land use, forms of anthropogenic relief, the management system, cultural heritage features, and vegetation.

The Slovakian traditional agricultural landscapes are evaluated and classified in the following classes:

1. Terrace slopes,
2. Steps (low step boundary of plot covered by grass or bushes),
3. Solitary heaps,
4. Lengthwise mounds (earthy or stone walls on the plot boundary),
5. Unconsolidated walls (dry stone retaining walls, supported the vineyard terraces),
6. Mounds or heaps formed on terrace slopes.

The study area of preserved and maintained TAL-s consists of units in the Western Carpathians. Mountains in different regions of Slovakia which contain three different types of landscape. The highest diversity of land use in all three study areas was observed in Svätý Jur, where large fields and vineyards were dominant. The conclusion of the research was that new landscapes are considered less diverse and less coherent than the traditional ones. However there has been a considered trend towards re-forestation and abandonment of TAL-s, as it is in Hriňová.

Preservation of natural values, biodiversity, clean air, water sources, traditional architecture and other values of TAL-s are important issues for tourism development and the production of local agricultural crops.

Project of the permaculture farm in Velika Gorica, Vukomeričke Gorice, Croatia

A farm following the principles of permaculture and circular agriculture is located in the village Vukomerić in Vukomeričke Gorice, the hill covered with woods near Velika Gorica, about 25 kilometres south of Zagreb towards the Kupa River (Figure 19). Vukomeričke Gorice is just like most rural areas, slowly losing village population and records of depopulation.

Figure 19. Vernacular buildings in a farm with circular agriculture in Vukomerić, Croatia

A group of people gathered in the organization ZMAG (Green Network of Activist Group) with an aim to educate people about using environmental technologies in agriculture, housing and energy production, to set up a center for permaculture and sustainable development. On 1 hectare they have currently two residential buildings and a garden where plants are grown by permaculture principles.

The farm in Velika Gorica is also conceived as a living and working space for a certain number of people to serve as a training ground for experimentation. The property is more like a construction place, so in the last few years a number of workshops and courses were held and various examples of ecological architecture, renewable energy sources, sustainable management of water and waste and organic food production were built and produced. A local traditional wooden house was used for courses and workshops, as well as a library, a shared kitchen and space for guests. And the house itself is an example of sustainable architecture because it was rebuilt in a way to achieve greater energy efficiency by using natural materials. There are also two private residential houses waiting for isolation, greening and transformation, so as an experimental house made of straw, the product of learning and experimenting with this architectural technique. Fifteen people live and work in the farm and organise open workshops where they teach other people on how to apply sustainability in their areas. This farm is most important project for meeting, learning and living, production and operation.

Mythical and educational trail in Mošćenička Draga, Croatia

An example of a thematic trail is located on the eastern slopes of Učka Nature Park, where the tour begins in Mošćenica and continues to the village Potoki. It is the actual starting point to a mythical-historical trail related to Old Slavic mythology and leading to the abandoned village Trebišća and reaching up to the hill of Perun in 880 meters high.

The track's length is about 15 km, with a set of educational panels along the trail with explanations of the history of the Slavs and their beliefs. Along the mythic dimension of this space, visitors can experience the natural values of the landscape and the memories of a difficult but scenic former life of people in this region (Figure 20).

Figure 20. Mythical and educational trail in Mošćenička Draga, Croatia

Ecological farm and green basket by Zdenka Dodig, Velika Gorica, Croatia

The farm includes orchards of pears and peaches and vegetable gardens in area of over 6,500 m^2. Vegetables are produced in areas that were formerly a cooperative pasture, so they were not fertilised and no herbicides were used there. The farm products are fruits, vegetables and processed food without using pesticides, herbicides or fertilizers. So they maintain soil fertility, diversity of species and ecological balance. The farm principles are related to connection between all elements: soil, water, sun, plants, animals, people etc. Human responsibility is to keep all parts of the system connected and safe for the future and future generations.

The soil is not only a medium for plants growth which we are exploiting for products, but it is a living system with thousands of little organisms that have to be healthy and balanced so to produce healthy and tasty fruits.

They process soil with unconventional methods – manually with hoe to get fine texture (physical structure) and to let beneficial microorganisms to grow. They also make compost by themselves and muck the soil with it and with stone flour, plants slurry or algae.

They cover the soil with straw and compost to protect plants from freezing and drying. Lavender bushes between the plants attract beneficial insects and a flock of ducks holds the snail population under control. In two greenhouses they produce seedlings in spring and tomatoes, peppers and eggplants during the summer. On this organic farm, biodynamic preparations were used to fertilize and protect plants from pests.

The 'Green Basket' is the weekly package of ecologically and locally grown and also seasonal vegetables with ecological certificates, so it contains no chemical sustenance that is conventionally sprayed on the vegetables (Figure 21). Those vegetables are picked up directly from the field, so they preserve all valuable ingredients that are otherwise lost by long transportation and cold storage.

Figure 21. Green Basket by Zdenka Dodig, Velika Gorica, Croatia

2.6.3. Rural fringe – examples from other European countries

2.6.3.1. Town -edge farms and Medvednica, Croatia

The rural fringe of Sarajevo has the potential for agrotourism and ecotourism and educational activities for urban population of Sarajevo. With its natural and cultural features it can also offer recreational activities.

Some examples of different land use could be: family owned farms or urban farms on the edge of the town that are developing in Croatia (in Croatian: OPG - obiteljsko poljoprivredno gospodarstvo). A family owned farm (OPG) is an independent economic and social unit consisting of adult household members, based either on ownership and use of natural resources in carrying out agricultural activities or just the use of productive resources in carrying out activities.

There are a lot of opportunities that the rural and peri-urban fringe of the city of Zagreb offer. Rural households in the county of Zagreb present many varied activities: balloon tours, riding a horse-drawn carriage, riding on ponies, a variety of sports and recreational facilities, such as walks through the forest to vineyards and old huts, visits to wine cellars, wine tasting from the family owned winery, ethno-demonstrations of the mill or weaving machines. What is most important is they offer a pleasant stay in nature, in the immediate surroundings of the city.

Excursion sites are also very diverse. There are a great number of lakes and ponds with sublime views and where one can enjoy nature walks. Climatic conditions in Medvednica are typical for Central Europe. The average annual rainfall is about 1300 mm and the average annual temperature is around 7º C. Snow cover lasts an average of 100 days per year, and is the thickest in February. Ski courses are covered with artificial snow and host ski competitions in January (Figure 22). Also, just like Trebević once had cable cars connecting it to Sarajevo, Medvednica had one too, which will hopefully open again in the year of 2015.

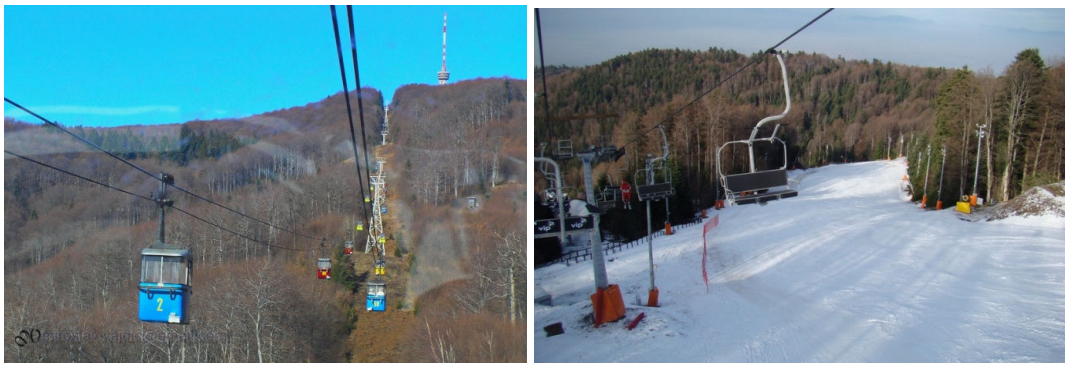

Figure 22. Cable cars and ski trails in Medvednica

2.6.3.2. Rural and urban fringe land use, United Kingdom

An example of rural and urban fringe can be found in United Kingdom. The rural - urban fringe is characterised by a mixture of land uses, most of which require large areas of land. The Ordnance Survey map of the case study area shows a large theme park Chessington World of Adventures, a major horse - racing course (Epsom), golf courses, cemeteries, hospitals, colleges, prisons and many farms (Figure 23). However, there are also other typical land uses that characterise the transitions zones between cities and the countryside. These include retail parks, business parks, waste disposal sites and a wide range of residential areas.

Figure 23. Epsom horse track (left) and Chessington World of Adventures (right)

Epsom has a worldwide reputation in the horse - racing industry. The area around the race course is also renowned for race horse training. The people who use the facilities in this area come mainly from city of London. If we compare both local and international examples, the more fitting one to implement in Sarajevo's rural fringe would be the Croatian one, with the emphasis on the natural aspects. The resemblance between Medvednica, adjacent to Zagreb and Trebević next to Sarajevo will build better know-how as both cases are located in similar environmental conditions.

2.6.3.3. Chelas Valley and Coina Wetlands Agricultural Parks, Portugal

Portugal, as the rest of Western Europe, has been through a profound process of urbanisation beyond former city limits over the past decades, and even in regions where the population is decreasing, urban areas are still growing (Piorr et al., 2011). As the urban pattern gradually distanced itself from the traditional compact city model, unfolds itself at the expense of the surrounding rural landscape (EEA, 2006).

To develop urban and peri-urban agriculture two agricultural parks Chelas Valley and Coina Wetlands were embedded in the context of the municipal ecological networks. Recently, the importance of this activity received support from international agencies (IDRC, FAO, UNCHS, UNDP, CIRAD, NRI, CGIAR, GTZ, etc) (De Zeeuw, 2003).

There are already some European cities like Guipúzcoa and Barcelona (Spain), Milano (Italy) or Toulouse and Île-de-France (France) that have concrete examples of agricultural parks, implemented in the context of ecological networks. For instance, the Baix Llobregat Agricultural Park (BLAP) in Barcelona is part of one of the twelve linked zones which form the Network of Natural Spaces managed by the Department of Natural Spaces of the Provincial Council of Barcelona (Maranges, 2013).

The BLAP was not an imposed land protection device, but rather a farmers' initiative to preserve their livelihood. It emerged as a bottom-up initiative in stead of the more common top-down bureaucratic policy-making (Kazancigil, 2010; Brunori and Rossi, 2007). Another example of agro-urbanism metropolitan projects is the Île-de-France region, where also a bottom-up initiative of the local cooperatives and agricultural associations was applied and integrated in the planning process with the scope of maintaining the peri-urban agriculture in the Regional Green Belt (Biasi and Pujol 2005; Vidal, 2014).

The projects of Chelas Valley and Coina Wetlands Agricultural Parks have applied an integrated approach that considers the ancient interdependence between cities and the surrounding rural areas. It intended to create two multifunctional sites combining neighbouring communities with production, conservation and recreation while contributing to the closure of the energy and waste cycles at local level (Magalhães et al., 2014). An internal pathway network was designed based on the analysis of the pre-existent trails and their surrounding connections in Coina. In the areas where plant communities of high ecological value are found, the paths are elevated (Figure 24) to preserve them from excessive disturbance, while allowing water, air and animal circulation.

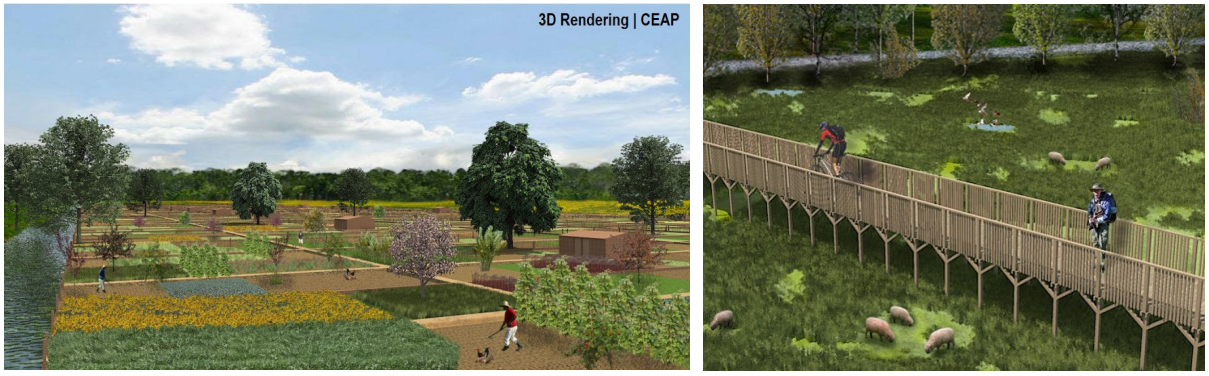

Figure 24. View of the farming plots and elevated paths in Coina Wetlands (3D rendering)

2.6.4. The concept of sustainable agriculture

Since the United Nations published the Rio Declaration in 1992, sustainable development has become a globally accepted approach and fact toward addressing the negative environmental

impacts of human activities and to ensure successful coexistence of humans and the environment. In 1987 the World Commission on Environment and Development (the Brundtland Commission) defined sustainable development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” — the achievement of which is a global objective today.

These considerations have particular relevance where agriculture is concerned. Although agriculture accounts for a relatively small share of industrialised economies, the sector remains one of the largest in terms of land use. This creates serious environmental pressures, but can also steer the way towards maintaining the natural resources and biological diversity and culturally valuable rural landscapes.

The agricultural sector’s immediate connection with rural development and its complex relationship with the environment are largely reflected in the Sustainable Agriculture and Rural Development concept, which perceives agriculture as a multifunctional sector — with not only economic, but also social and environmental outputs. As part of Agenda 21 adopted at the Rio Summit, this concept has been adopted by many countries and organisations.

Sustainable agriculture is also an issue of major concern in the European context and is receiving greater attention within the EU’s Common Agricultural Policy (CAP). Recent CAP reforms focus more and more on sustainability aspects and agro-environment has emerged as a key element of EU agricultural policy since 1992. The overall reform process seeks to move away from a purely production-oriented policy in order to implement the structural changes necessary for integrating rural development and environmental aspects.

At a more practical level, farming has several important aspects that determine to a great extent whether or not agriculture can be sustainable over the long term. These include:

- sustainability and rationality of land use according to specific local production conditions;
- clear and respected rights and responsibilities of farmers concerning sound land management (good farming practice);
- remuneration to the agricultural sector for providing social and environmental services that cannot be sold as market products; and
- creation of properly functioning markets and delivering sufficient income to farmers and a production portfolio adjusted to specific market needs.

Most of these aspects will first appear at the policy level. However, when implemented in a concrete context, they become important factors in achieving agricultural sustainability at the local level. Land use in agriculture is rational when a method and intensity of production is in conformity with specific conditions in economic development both in terms of production potential and environmental sensitivity.

Applying such an approach should result in the avoidance of both over-exploitation and under exploitation of natural sources. One of the basic preconditions for agricultural sustainability is the application of a land use system that establishes an appropriate level of production

intensity, while getting maximum efficiency out of the most suitable farming equipment. Agricultural policy should identify these differences in farming areas and provide incentive packages and development agendas that are most suited to particular features and characteristics of the region.

Beyond a rational land use system, farmers as land managers making everyday decisions concerning production will define not only the type and quality of their products, but also the sustainability of land resources. It is important that clear principles and parameters be defined in this respect; and these parameters often included in the code of Good Farming Practices. To define those minimum environmental requirements demand that each farmers need to respect to these criteria when running their farms and implementing their production systems (Scott & Collier, 2014).

However, farmers will need to deliver more than products grown in one season. Agriculture contributes to society in many other ways, such as maintaining agriculture-dependent biodiversity, protecting land resources, and maintaining traditional countryside and agricultural landscapes. In most cases, consumers do not pay for such services. In fact, most services are performed at a loss to the farmer, or at least require additional investment.

One of the main objectives of the current agricultural and rural development policies is to find appropriate solutions to ensure that farmers are compensated for providing such services to society. Support mechanisms that serve such purposes will play an important role in maintaining the countryside and ensuring the sustainability of traditional rural lifestyles.

On the other hand, consumers are becoming more interested in environment-friendly agricultural products and specific rural services. This has created new market niches and will likely provide new opportunities for farmers to diversify economic activities and develop new sources of income. However, to utilise such opportunities and benefit from them still requires great effort from farmers and substantial government support.

2.6.5. Opportunities for Sarajevo

For future opportunities for developing sustainable agriculture in Sarajevo's rural fringe the primary advantage is that the existing agro-ecological conditions and available agricultural resources lend themselves well to reintroducing traditional forms of extensive livestock production. Besides this, the local availability of traditional products can create opportunities for producing marketable, and high value-added products.

Surface-water resources (streams, springs, rivers) are quite evenly distributed in the region and are probably sufficiently clean to support livestock production.

Due to low population density and low-intensity economic activity in Sarajevo, even generally extensive agriculture is unlikely to pose much of an environmental threat. If, however, economic development speeds up, risk of pollution (e.g. from human waste, illegal dumpsites and livestock waste) would likely increase significantly on the other hand.

Grasslands are the main resource for local agriculture. They are not only important for agriculture, but they also have nature conservation value because of their range of fauna and

plant communities. Sustainable utilisation of these grasslands is not ensured today. A great part is abandoned, leading to degradation and overgrowth with shrub-vegetation. In the past, grasslands at lower elevations were also subject to different land reclamation measures aimed at increasing productivity, and to make them more suited to intensive production through reseeding and fertilisation. As a result of these efforts, species composition in these grasslands has become far less diverse and valuable in terms of biodiversity.

The analysis of the study area resulted in a list of wide range activities for structural and rural development that will be eligible for this case, which are shown in the table 5.

Table 5. List of possible activities for sustainable development

Efficient land use	Establishment and updating of land registers in order to have a transparent basis for the organisation of land-use
	Land improvement and re-parcelling for an efficient land-use considering existing natural and cultural values
Infrastructure	Development and improvement of rural infrastructure to serve the multiple functions.
Water management	Agricultural water resources management and sustainable water management in an around villages.
Environmental quality	Support and develop agricultural production methods designed to protect the environment and maintain the cultural and natural value of the countryside
Training	Improvement of vocational training for agriculture, forestry, tourism and recreation.
Heritage	Organise protection and conservation of rural heritage, both in the villages and in the surrounding landscape.
Supporting farmers	*Support investments in agricultural holdings*
	Setting up farm relief and farm management services, such as common use of machines, exchange of labour, labour pool for holidays and sick leave.
	Setting up producer groups in the form of co-operations or associations.
Agriculture	Improving the organisation for quality of produce and crops, veterinary and plant-health controls.
	Development and diversification of economic activities, providing for multiple activities and alternative income,
	Improving the processing and marketing of agricultural products.
Forestry	Planning the development of forestry, including afforestation plans.
	Investments in forest holdings owned by private forest owners and processing and marketing of forestry products.
Villages	Renovation and development of villages.

2.7. Land use planning

2.7.1. The necessity of a rural landscape planning approach

Examples from other areas of different modes of communication and ID technologies

by architect Matea Lončar and architect Tanja Udovč

Petrovici as a rural fringe

Rural areas are extremely valuable and varied landscape with importance of proper management and planning of the land with benefits for the whole region and wider area. Here natural values of rural areas include natural resources, biodiversity, protected natural areas, etcetera. Besides natural significance, cultural values such as traditional architecture, old villages and farms with cultural landscape, fences, vineyards, orchards, gardens, terraces and other structures, extensive animal husbandry, local knowledge, and many others contribute to the uniqueness of this area.

Comprehensive and efficient landscape management is based on detailed knowledge about the area with analytical approach and given guidelines for further development and nature protection.

The current vision on and awareness of the public of the environment, landscape and natural resources should be substantially higher. It is important that local communities and authorities accept and become aware of new models of planning and valorisation of rural landscape with an emphasis on rural elements, because they are important factor in economic development of the country. Rural landscape identification and planning for the future on time, provides the basis for further prosperity and development of a specific location or destination.

Since Trebević is predominantly a protected landscape with forest and meadow vegetation with sporadic rural units, the settlement Petrovići is predominantly a rural landscape with different natural and cultural values. Therefore there is a need to raise awareness of conservation and sustainable use of biological, landscape, cultural and traditional diversity of the above mentioned areas. In the field of landscape planning necessary steps for proper and sustainable management of rural landscape would represent a development of the landscape typology, evaluation studies of rural landscape and finally produce a landscape plan.

Analysis and evaluation of rural landscape examine the way in which rural development such as tourism, agriculture can be developed in a particular region as to be a leading factor in its integrated and sustainable spatial development (harmonisation of social, industrial, cultural and environmental interests).

This study has all the basic elements of a Landscape Plan and represents the basis which will show spatial possibilities, potentials and limitations. It analyses the impact of various rural and agricultural policies on rural landscape development and its role in socio-economic structure of rural areas.

Through detailed inventory and analysis of rural areas (ArcGIS, QGIS) it is possible to set parameters for certain activities and development through creation of three models: attraction, vulnerability and benefits. The model of attractiveness is linked with development activities, while the model of vulnerability is a map that defines areas of least harmful impact of certain activities on the environment. The result of overlapping above mentioned two models is a model of benefits which shows optimal location of activities with both development and protection aspects. Based on the above given suggestion, most suitable locations and suggestions for linking certain activities are given within long term development vision.

In addition to conservation and protection processes of the area, it is necessary to encourage sustainable economy, devise innovative products and create jobs for young population to remain on the area of Trebević, Petrovići village and other settlements that are experiencing depopulation and emigration. In order to attract daily and multi-day visitors, government and locals have to ensure development of unique tourist attractions.

Local residents should be organised and linked in group initiatives or clusters where they can jointly devise projects and look for incentives following the vision of development of this area. The vision of development of this area also includes empowerment of organic farms, selling of organic products and offering traditional cuisine (authentic organic product). Trebević can also become again a centre of sport and recreation in a natural landscape as in previous years, predominantly forest vegetation and clean air.

2.7.2. Planning tools for Petrovici

Just like the other villages around Sarajevo, Petrovici suffers under the process of transformation in the fields of agriculture and rural development. New opportunities of the development and orientation of the agricultural production, based on local potential under the new social and economic initiatives are needed in the context of regional or maybe European cooperation.

The local land-use plans are not updated and the local authorities wish to up-date and approve it in their respective villages in order to go on in the socio-economic development strategy and refurbishment of the villages. Elaboration of the local land-use plan is the basic assumption for spatial development as well as the important instrument for sustainable spatial development. Without elaboration of territorial planning documentation it is not possible to realise new investments. The condition for approving subsidies and grants for the development projects is that these are included in the territorial planning documentation. A list of the detailed strategies and measures for the elaboration of the spatial development plan is given in Table 6. Solving problems within the individual villages is not possible. The way forward is an integrated approach based on participation, partnership and interactive way of programming of spatial planning as background for sustainable settlement development and employment.

Table 6. List of the strategies and detailed measures for spatial development plan

No	Strategy	Measures
1	Conditions for development of economic activities	- Improvement of the availability of ground plots - Improvement of technical infrastructure - Improvement of the transport connection
2	Improving of living conditions	- New employment activation - Improved housing - Cultivation of open spaces
4	Public rural infrastructure	- Public rural infrastructure - Sewerage improvement - Water supply improvement - Transport infrastructure improvement (in the municipalities)
5	Maintenance of countryside and landscape features	- Traditional agriculture support - Specific agricultural activities implementation - Support of traditional agricultural forms of buildings
6	Agricultural forms of improvement of the quality of environment and landscape	- Organic farming support
7	Areas of biodiversity	- Elaboration of local plan of ecological stability
8	Cultural heritage	- Activation of local potential – church, pilgrimage, cemetery, - Cultural traditions development / cultural country side development
9	Social cohesion	- Stimulation of the change of attitudes - Implementation of new forms of participation
10	Development of tourism potential	- Strengthening of integration in micro-region - Eco-tourism and agro-tourism development - Social infrastructure improvement (qualitatively, quantitatively)
11	Reparcelling of land	- Optimisation of land-use - Activation of the reserves in land
12	Improvement of zoning	- Zoning plan elaboration and optimisation - Optimising of new functions of the zones

2.7.3. Guidelines for the development of Trebević mountain and Petrovići village

A guide for sustainable development of Mount Trebević and Petrovići Village would include multiple planning, policy and management issues, which are discussed separately in this section.

2.7.3.1. Planning approach

It is indisputable that the planning of rural landscape is prerequisite for sustainable management of natural and cultural resources. Perceiving and analysing potentials of an area requires a spatial scale planning possibilities for development of certain activities. Such a planning approach can help to determine location of specific activities and provide guidelines for sustainable development and the least possible negative impact on the environment. There should be an integrated approach for the preservation and protection of natural resources as key components for sustainable development for Trebević.

2.7.3.2. Development of local activities, economy, tourism

All activities should follow the principle of ecology and sustainability. It is necessary for local initiatives and government to encourage development of agricultural activities (farming and livestock) such as beekeeping as an economy basis with emphasis on an ecological approach. The

local population produces for their own domestic needs, but it is necessary for them to develop a marketing and selling network for their local organic products. They can sell by themselves on the local family farms and taverns or by organisation of Green farmer markets and Green baskets. It is necessary to develop infrastructure in the area so to improve communication between the locals and to organise Green farmer markets in Trebević, Petrovići and in the city of Sarajevo, for which transportation should be organised.

Regarding to the offer and sale of the products, it is possible to organise various events which would gather people from the region and beyond, to have fun, taste the products, enjoy the natural beauty of landscape, learn something new, etcetera.

Rural tourism includes the development of eco-villages, equestrian tourism and accommodation on farms where tourists can stay overnight. Tourist might engage in voluntary work by assisting in daily household tasks like traditional cooking, in the garden cutting the grass, weeding or pruning, or more specific agricultural tasks such as cleaning the stables, milking and feeding cows. In that type of accommodation you can sleep on hayloft or in traditional wooden beds. The menu is traditional, domestic with local ingredients.

2.7.3.3. Development of sport and recreation

Trebević needs to restore its lost sport and recreational spirit, which value lies in fresh and clean air, green nature, biodiversity and detachment from the city bustle.

On mountain Trebević, it is necessary to provide reconstruction of existing and construction of new two-way roads for cars, buses and coaches so as public parking lots for visitors. There is also a need to re-organise the existing walking and hiking trails and build new ones with markings and signs to connect different natural and cultural values and tourism facilities of the area. It is possible to plan theme trails with info boards, signs, characters, etc. Thematic trails can be also related to Slavic mythology (god Perun, Veles).

It is also desirable to develop a plan of bicycle paths. Cycling is a very popular form of tourism for favourable health and environmental effects. Bike trails for mountain biking and several unordered trails from village Dobra voda, over Tabačka ravan to Knjeginjec exist in Trebević. From the point of site design, it is necessary to make cycling paths separated from walking and hiking, adding additional facilities such as lookouts with beautiful view, resorts, benches, waste bins, lighting. According to some guidelines for development of Trebević, paragliding is also planned as a recreation potential.

An ecological alternative to asphalt stabiliser, the final layer of crushed stones connected with natural plant binder can be an environmentally friendly option. The material is 100% natural, porous, does not freeze and does not crack (stable).

2.7.3.4. Education and transition to ecological (organic) production

Ecological production includes permaculture and biodynamic garden design and methods. For mountain Trebević and in village Petrovići, a pilot project of permaculture farm can be an alternative approach for local and regional development. Permaculture consists of a consciously

and ethically designed system of interconnected elements and patterns taken from nature, which provides people with plenty of food, materials and energy. The essence of this approach consists of people, the objects they build and the way they organised themselves. Permanent agriculture is related to permanent and sustainable culture and cultural landscape in harmony with nature.

Linked with permaculture is a forest garden which consists of trees and shrubs that have edible fruits (walnuts, chestnuts, fruit trees, bushes with berries, herbs and other productive species). Such gardens are beneficent for local people and visitors where they can pick fresh and healthy fruits, and are feeding wild life as well. Locals can sell fresh and dry fruits, berries and herbs.

Agriculture need to be focused on collection of green waste from households and from the garden to make compost which feeds the soil. Topsoil on fields can be covered with straw to protect the soil from drying out so that the plants have moisture for a longer period and nutrients from composting straw. Organic products can be sold on the Green farmers market and Green basket management in Trebević, Petrovići or in the city of Sarajevo and beyond.

2.7.3.5. Organic wool factory in Sarajevo

Organic products have been gaining greater importance due to environmental and health issues. Organic wool can be produced by sheep that were not exposed to any chemicals like pesticides. The clean environment of the rural fringe of Sarajevo offers a perfect location for organic farming.

Natural materials such as timber, clay, stone, straw, ledger, leaves and sheep wool have been familiar to human being as a raw fabric. Most of these materials are available around us and more importantly, they are from resources that naturally replenish themselves almost annually.

Sheep breeding is an important and traditional activity in Bosnia and Herzegovina (BiH) and a region of the former Yugoslavia, particularly in the hilly and mountainous regions of the country where there are few alternative forms of production or income generating opportunities.

The pre-war sheep population in BiH was close to 1.3 million heads. Domestic wool was used by the textile industry, which included several big factories and corporations. The textile market of former Yugoslavia was a stable economic sector but now it is collapsed. Almost the entire sheep population in BiH belongs to the Pramenka breed. The white wool of the Pramenka has a fibre diameter between 35 to 40 µm on average. Lock length average is between 12 to 20 cm. Wool yield is 1.7 kg per sheep. The quality of the fibre is ideal for insulation material. Some organic wool producers are specialised in home decoration such as bedding, quilting, pillows.

Locally produced organic wool is on demand for textile and fabric. Such materials are sought for sustainability and energy efficiency in buildings for thermal insulation quality. For CO2 reductions and ecological properties of the buildings, it is essential to maximise the use of ecological materials to make the buildings sustainable. The Sarajevo based small factory “Wool-Line” in line with new requirements and standards has been trying to make new natural insulation product for the growing market of BiH and region. The new insulation material in combination with a strong wood industry in BiH could make sustainable contribution to the building sector in BiH. This private initiative can be an example of good practice in city of Sarajevo as an interaction

between urban and rural (past and preferably present) or intangible values that imbedded urban need and rural resources also for the climate change issues and requirements.

2.7.3.6. Renewable energy and constructing for passive energy

The total energy reaching the earth in a year is two times higher than the stocks of all the earth's non-renewable energy sources (oil, coal, natural gas, and nuclear energy). Due to technological progress, today we can catch very efficiently the enormous amount of energy that the sun gives us with the system of photovoltaic panels (solar panels) and convert it directly into electric energy.

The system of photovoltaic panels includes following: photons of light are hitting the photovoltaic panel, where the silicon semiconductor crystals absorb and run the reaction on the atomic level. Negative electrons are released from atoms and begin to move freely through the material creating electricity. Because of the certain construction of photovoltaic panels, electricity can only move in one direction. Bosnia and Herzegovina is geographically located in a position that enables a high level of utilization of solar energy through the whole year. The map of Europe shows that the value of solar radiation is ranging between 1400-1700 kWh /m².

Architecture and civil engineering together can develop a traditional style with constructions for thermal insulation and passive energy, which includes orientation of openings towards the sun, orientation of the rooms according to the function to various directions, glass walls facing the south.

2.7.3.7. Biomass

Biomass is a form of renewable energy because the material used can re-grow in a relatively short time. No matter which kind of biomass we use, the amount of used biomass should not surpass the amount of biomass, which is being renewed in nature.

Obtaining biomass can be used scrap from the forest and natural downed trees and debris, as well as forest waste resulting from by sawing and wood processing. Using the waste material can help to protect the forest areas in Trebević. Forest bio-waste can be used as raw material for the production of briquettes and pellets, which can be used as energy in households.

Bio-mass can also be obtained from crops (straw, corn stalks, cobs, stems, seeds, crusts, etc..) in the area, as well as household and garden waste. Animal waste, such as faeces and green waste can be used to produce biogas.

2.7.3.8. Marketing and branding

Marketing strategies should be focused on the branding of the area, especially because the area Trebević has been neglected, isolated, forgotten and abandoned for decades. A first step would be to increase the population and to support them in developing their business and economy not only for themselves, but also for whole area. This can be achieved by encouraging locals, through the applications for EU funds for rural development, transition to organic production, innovation in agriculture, funding for tourism, etcetera.

Promotion also consists of informing customers, other stakeholders and broader public about the products that the locals make, their quality and uniqueness (ecological approach, branding). It is also important to develop the infrastructure and capacity for visitors (tourists) and draw them back to Trebević and village Petrovići offering a variety of facilities and activities, services and opportunities for spending their leisure time.

All this can create a network of good cooperation between locals, government and tourists. For example all producers, activities, structures, localities can be displayed on an interactive tourist map on web site or 2D/3D hand maps. Some other promotion tools can be also brochures, leaflets and visit cards for local entrepreneurs, or joining in social networks, such as Facebook, Twitter, LinkedIn.

Information panels, brochures and other items for visitors can be placed at the entrances in the Trebević area and village Petrovići. A touristic visual identity also includes the design and application of touristic symbols, such as waymarks, info tables with maps and description of sites in the entire area. Visual identity of products should be also developed, like logo package and signpost of Green basket and other products of locals.

2.8. Reflections and conclusions

Understanding rural fringes of Sarajevo during LE:NOTRE Landscape Forum 2014 and afterwards has brought a different dimension to rural fringes. In the case of Sarajevo these are not only transition areas between cities and natural areas but also transition zone between war and peace, as well as past and present.

Sarajevo, the capital of the Federation of Bosnia and Herzagovina was once centre of cultural and religious diversity due to multicultural facets and called Jerusalem of Europe. But the unfortunate Bosnian war between 1992 and 1995 war, the Siege of Sarajevo and conflict afterwards have great dichotomy and divergence to the territory and degradation to landscapes of all types. Towns and buildings were destroyed to a large degree and rural areas were overexploited as a battle ground. Rural fringes were not safe and liveable therefore deserted by local inhabitants. The rural fringes of Sarajevo have become a fragmented post conflict landscape. They have been disturbed and neglected by the memories and consequences of the Bosnian war. People drifted from rural areas for safety reason due to land mines and farming skills and traditional land use patterns were forgotten and abandoned. This was evident and visible in the case of Petrovici and also mount Trebević was once an iconic site and imbedded with the collective memory of the inhabitants Sarajevo which became a kind of romantic ruin.

Almost 50% of the population in Bosnia and Herzegovina is in some way associated with agricultural production. Despite its relatively low economic return in terms of income, agriculture has a great social merit. On the other hand, the declining population of rural areas, deteriorating life quality in rural areas and lacking plans for the use of rural resources are the main issues today.

Therefore revitalisation, planning and good management of rural areas are crucial for on-going economic and social recovery. Possible initiatives that combine eco-farming and eco-tourism can be integrated into planning of rural fringes of Sarajevo and help to maintain

sustainability and stability of the environment and economy, core issues in most post conflict areas.

Examples from good practices of neighbouring countries such as TAL (Traditional Agricultural Landscape structures) in Slovakia, the permaculture farm in Velika Gorica, Vukomeričke Gorice and the Ecological Farm and Green Basket by Zdenka Dodig, Velika Gorica in Croatia can be comparable models for Sarajevo. There are a number of funding opportunities to be benefited for sustainable development.

Commitment to European Landscape Convention (ELC) would strengthen such initiatives that should be undertaken by the government and institutions. As Bosnia and Herzegovina situates in the European continent and comprise natural and cultural diversity with the European context, the implementation of the ELC can be one of the tools to identify, enhance and protect the characteristics of its landscapes. The ELC aims to promote landscape protection, management and planning, covering natural, rural, urban and peri-urban areas. The convention asks the parties to analyse characteristics and the driving forces and pressures transforming their landscapes. More importantly it sees landscape as a resource favourable to economic activity whose protection, management and planning can contribute to job creation (Council of Europe, 2000). In September 2010 Bosnia and Herzegovina has already complied with the convention by Mr. Sredoje Nović, Minister of Civil Affairs of Bosnia and Herzegovina. It as ratified in January 31ty of 2012 and the Convention has put into force on the first of May in that year.

Bosnia and Herzegovina also joined the "Convention on the Protection and Promotion of the Diversity of Cultural Expression" and "Convention on the Protection of Underwater Cultural Heritage". As the Minister expressed in an address to the UNESCO session: "Owning to cultural heritage and the highest values of material and spiritual culture, it is possible the enhance mutual cooperation and coordination with in the integration processes by bringing cultures closer through joint work in this field, joint projects and programs, because the value of cultural heritage goes beyond all borders".

Sarajevo is different from any other rural fringe due to recent past and the processes that the city has gone through. There have been decreasing numbers of population and a less diverse rural landscape characters due to intact forests and land mines in some parts (Table 7).

Only a small part (15%) of the population of the Sarajevo Canton lives in rural areas. Depopulation of rural areas and migration to the cities is still a major issue which gradually causes the deterioration of rural areas and rural life.

Table 7. Evaluation of rural fringes and Sarajevo case

Rural Fringes in General	Sarajevo Case
- Edges of cities were urban meets countryside	- Decreasing number of rural population
- Variety of land use	- Great potential for farming and agriculture
- Traditional rural life	- Fragmentation of rural land plots
- Urban expansion	- Land mines in some parts
- Ever changing transition zones	- Lack of a long-term investment
- Ground for housing developments	- Simplification of rural characters into forests
- Intense development pressure	- Post-conflict rural land tenure
- Conflicting views	- High biodiversity
- Suburbanised villages	- Clean air and nature
- Green field sites	- Preserved large natural areas
- Leisure facilities	- Scattered nucleus villages
- Potential for future development	- Deterioration of rural life
- Pressures of urbanization and infrastructure	- Lack of plans for the use of rural resources

The rural fringes of Sarajevo offer great opportunities for agriculture, urban economy and regional development. Agriculture and tourism would help improve both existing and future quality. An integral rural landscape planning approach requires a holistic approach to analyse processes, patterns and products related to rural fringes of Sarajevo. Core themes for education, research and innovative practice are presented in Table 8.

Table 8. Potentials for future research, education and innovative practice in rural Sarajevo

Potential areas to focus for future research
- Perception of rural fringe of Sarajevo as post conflict landscape
- Cultural, natural and social values
- Social-economic aspects of rural landscapes; population characteristics, lifestyles
- Bio-physical features of rural terrain
- Multifunctional adaptation of rural fringe Sarajevo
- Driving forces of change in rural Sarajevo and Mount Trebević (past and present)
Potential areas to focus for education
- On-site methodologies to identify and analyse landscape values
- Methodologies for simple scenario buildings
- Public involvement and presentations
- Multidisciplinary approaches in the planning of urban-rural fringes
- Communicating tools in planning
Potential areas to innovative practice
- Potential of rural Sarajevo as a green infrastructure
- Public participation in spatial development
- Involvement of all stakeholders in and around rural fringes
- Frequent diversification and direct marketing initiatives for the local products
- Diversity of farming systems and activities contributing to multifunctionality of rural fringes
- Sustainable rural development
- Cooperation, coordination and exchange of information

Sustainable development aims to support economic, environmental and social welfare. Economic sustainability is to maintain a development based on sustainable use of natural resources. This also supports social sustainability that strengthen the identity of the society, enhancing the life quality that compatible with cultural and social values. To increase income for rural economy would attract local people to re-settle back to rural areas. However there are remaining difficulties in planning and management of the landscapes due to multitude of authorities and decision maker bodies and lack of coordination between institutions. There are enormous needs

for counselling and subsidiaries to help the now limited marketing of local products, high production cost in agriculture due to the mountainous land features and complex topography.

The rural fringe of Sarajevo has the potential to become an example of sustainable rural development on the edge of the city. But first the complexity of post conflict environment must be analysed and understood. Initiatives for economic sustainability for the city and the region within rural fringes should be considered and integrated into planning procedures and processes together with ecological and social sustainability.

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Chapter 3.

3. A Future for the Colentina Lakes Chain

LE:NOTRE *Institute*

Linking landscape education, research and innovative practice

Landscape Forum Bucharest 2015

Rural Fringe & Local Food Production Working Group

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Bucharest, 2015

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3.1. Pantelimon: rural fringe and productive landscapes

This workshop will focus on the landscape of Pantelimon Lakes located in the east of the Colentina Emerald Necklace in the northeast part of the Bucharest region. It aims to investigate the fragility of the urban – rural boundary transformation and to make proposals for a sustainable development for the peri-urban area. The landscape of Pantelimon is of typical interest for production, heritage, hydrology, and governance.

Productive value

In this area still has rural morphology is still predominant, but the land use is changes continuous, under the pressure of economic factors. The social and urban characteristics of the area represent at least two issues:

- There is an opportunity to boost agro-productive activities with a wide range of products and different type of food production. Depending on existing fragmentation, the size of the parceling and distance to the urban area the business models and type of land use may differ.
- The lake might provide opportunities for fishing or fish production depending on the water quality.
- There are new developments of industrial and commercial activities and evolution of the existing activities, including a re-use of old brown field areas.

In accordance with the actual use, local inhabitants may contribute to the productive land use a result of traditional activities with new technologies and activities.

Heritage value

The high riverbanks and floodplain terraces of Colentina with its rich resources, have from prehistory on always been a favourable living environment, as evidenced by the abundance of remains confirming the presence of the rural settlements in all historical periods. In the late Middle Ages the settlements are organized around the Pantelimon-island monastery that occupies a key position in scenography of the natural and historical site. The monastery plays an important role in the rural transition and forms the main heritage value of the area. For the peri-urban area historical agricultural patterns are still recognisable, like the drainage system and land parcelling which dates from the communist era.

Hydrological value

The existing river/lake is a resource for irrigation of the nearby agricultural land. The marsh lands are important for biodiversity, and the riverbanks provide value for recreational activities, such as walking, hiking, and fishing.

The extensive urban development, mostly private, has its effect on the perception, accessibility and biodiversity of the Colentina lakes. Mainly because houses are built close to the water's edge. The effluent of de-central sewage systems streams in the lake and also is dispersed in the groundwater.

The structure of the irrigation is related with the drainage system of Voluntary, but the system is no longer functioning as a whole. There is an opportunity to create a greenbelt of the lakes. An integral approach of the relationships between the hydrological units on a local and a territorial level (the Colentina greenbelt) should include a careful management of the wetlands. A greenbelt can provide a proper productivity of the land, high environmental quality of water and air and also healthy ways of spending leisure time.

Governance value

Pantelimon's potential is very high. It could acquire a competitive position on the global productive market, but is at the same time, undervalued and not enough exploited. The priorities of quality of life, well being, and economic performance need to translate into a marketing vision, with precise strategies and objectives.

Taking into account the numerous challenges that Pantelimon presently faces, the capital of the productive landscape needs a solution that ensures not only its subsistence on the urban market, but a favourable and durable position and solution for improvement made in branding the products.

3.1.2 Aim of the workshop

The workshop addresses the following questions on the existing landscape:

a. Which values and potential can we discern in the **existing landscape**?
b. What are the demands and needs of the different s**takeholders** in the area?
c. How will the peri-urban develop **without planned interventions**?
d. What is needed for a **sustainable development** of the area?
e. How can the area contribute to the **food production for the city**?

We also collect some examples of good practice or other reference studies that may serve as inspiration for the Pantelimon area.

Questions for the future development are:

a. How can the **local value** of the land use be restored in and around the Pantelimon Lakes?
b. How to find an **equilibrium** between **urban sprawl** and policies, principles of **respecting the history** and finding common shared values?
c. How can different kinds of **values** be **negotiated and compromised** if they are in conflict? What are the opportunities we have to **reduce competition** and confusion?
d. How to manage the development of the residential and the productive areas in combination with **landscape and water**?
e. Which **governance model** could be suggested for achieving sustainable objectives for the area?
f. What is a good **planning strategy** for this area, which **design concept** can be adopted?
g. Which **spatial and planning measures** can help to improve the quality of this landscape?

3.2. Study site and first impressions

Pantelimon, in the rural fringe of Bucharest (Figure 1) was visited on 22nd of May 2015 together with local experts according to four predefined focus areas (Figure 2): (1) the visiting points for fishing (professional & hobby) and other recreational activities, (2) Cernica Monastery and agricultural production, (3) Traditional pastoral activities, and (4) Pedagogical farm of Pantelimon and the industrial dairy farm.

Figure 1. Location of Romania, Bucharest and Pantelimon

Figure 2. The four focus areas of the visit along and to the North of the Colentina lake system

Main observations during the site visit

The visitors experienced great contrasts and rapid changes in and around the Pantelimon, which are often difficult to understand. There are impressive views on the city and the river. Because of this objects in the area are often out of context, missing relations to the landscape and the area. It is a peri-urban area where people carry out rural agriculture under pressure of urbanism. The area still feels like rural but together with biodiversity, wetlands, but suddenly you find yourself in garbage. The scale and diversity in landscape patterns makes that people staying and moving in the landscape have the feeling of getting lost.

This might be caused by the chaos after the communist era and the transition to a liberal and democratic system. Many people had the chance to get out of city, and because of lack of regulations scattered new neighbourhoods around the city were formed. There is a rapid uncontrolled urbanization. Second houses cause pressure on the forest and wetlands and other natural areas. At the moment there seems to be still a lack of environmental awareness.

Bucharest is very interesting city, not violent and very dynamic give. There is a great number of cultural values in the landscape. The agricultural fields in the Pantelimon area used to be very important for food and people. The open parts of the landscape feel a bit like walking in a desert, and then coming to oasis of the monastery, the natural pristine forest, and well cared agriculture plots.

In the area there are a lot of challenges to address. There is a lack of infrastructure and transportation and environmental management. Nature values in wetlands and forests are threatened by problems with sewage and other environmental pressures. There is loss of productive land and soils on the urban fringe.

The landscape is fragmented and disorganised scattered with houses without any public space. Walking there one gets a hopeless feeling about the area with so hard to solve problems of sprawl. There is a big gap and big contrast between high potential of nature, agriculture and the sprawl. The two groups people, those who are using the landscape for agriculture, pastoralism and those who are only living in the settlements, surrounded by high walls do not seem connected. There seems to be a lack of ownership of the landscape as if it looks like it is nobody's land, which also causes a lack of social safety. The accessibility is hampered by private areas near the lake shore and along small streams. The beautiful forest of Cernica lacks suitable walking trails.

The area has a lot of potentials. Green belts can be developed around the urban fringe to include different activities for the people of the city of Bucharest such as collective gardens, recreation areas, and small nature reserves. One can open clear views of the lake, and wetlands. There is still a high quality of open space and by reservation of public and semi-public space, one can develop an integrated landscape approach which includes improving accessibility and mobility. The high potential for local food production, can be used for developing sustainable agriculture, multifunctional, recreation, educational, protecting the features of the area. There is a strong potential of improving landscape quality by organising the water management of the lakes, ponds

and the rivers running between Cernica forest. An important question is still how to organise the integration and participation of local people.

During the visit on the rural fringe of Bucharest it was possible to meet some local shepherds with a flock of 300 of sheep, visit the unique Cernica forest with native flora and fauna and important habitats on the outskirts of Bucharest city, overall cultural and natural features of Pantelimon (Figure 3, Figure 4, Figure 5, Figure 6).

Figure 3. Images of the field visit: local shepherd (left), Cernica forest (right) (Atík, 2015)

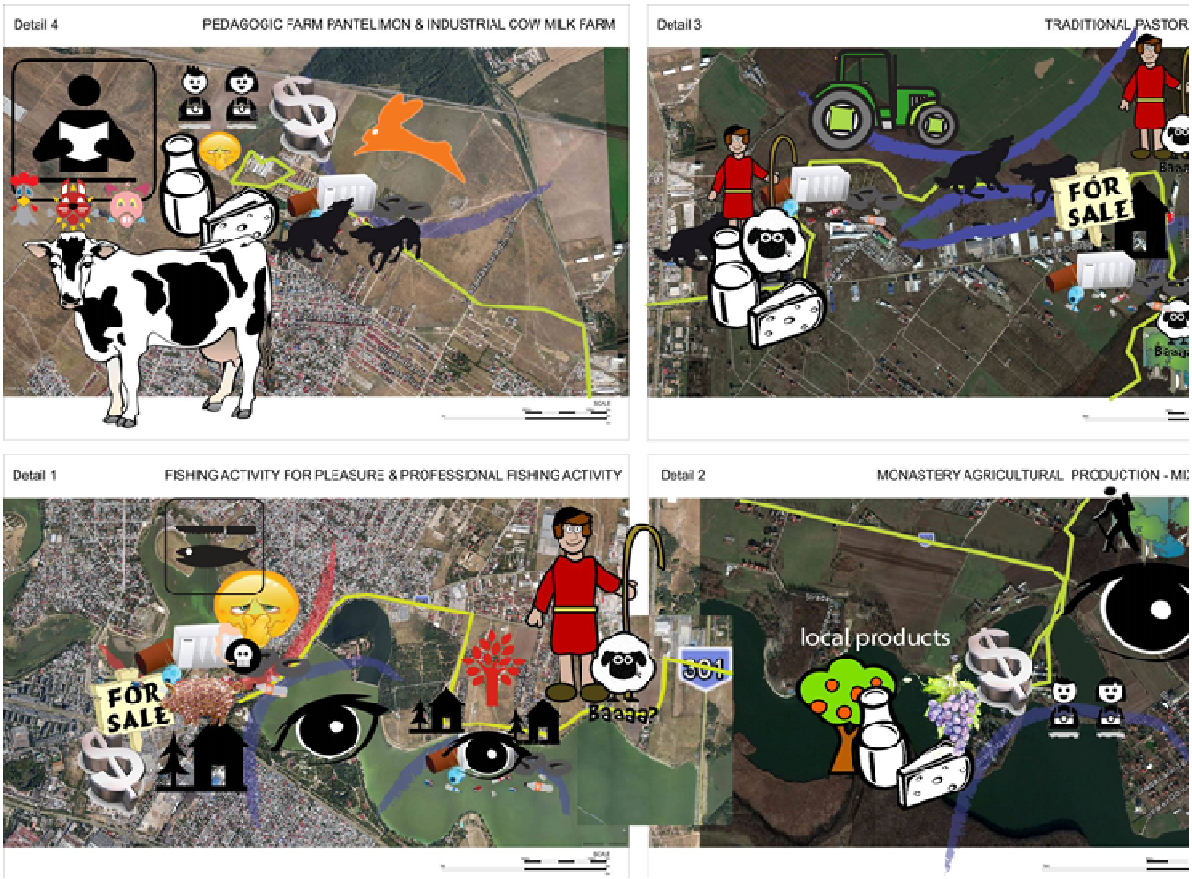


Figure 4. First impression from site (Chiriac, O., 2015)

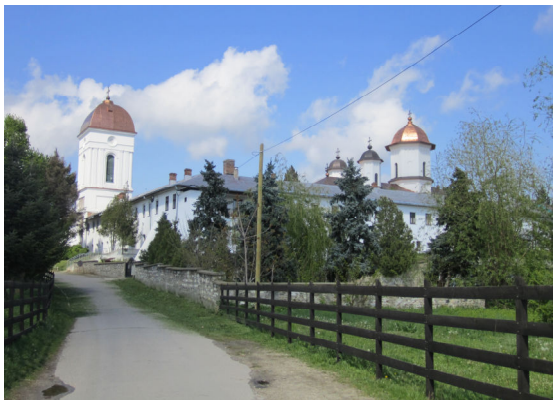



Figure 5. Cultural features in Pantelimon (Atík, 2015)


Figure 6. Natural features in Pantelimon (Atík, 2015)

3.3. Workshop process

During the workshop session local experts presented information and experience and gave feedback on interim results. Small groups were working on a SWOT Analysis and a DPSIR-analysis for the area of Pantelimon (Figure 7).

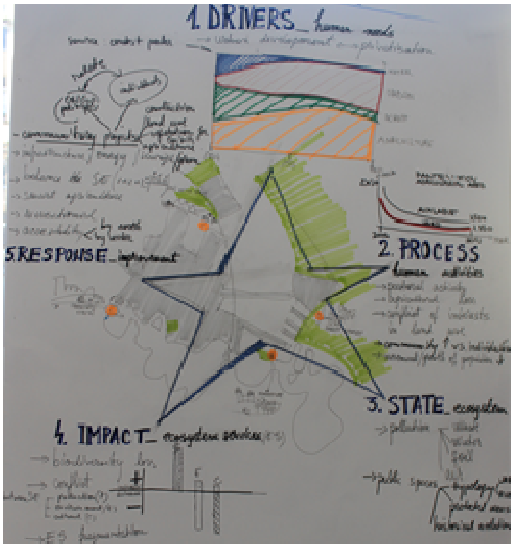

Figure 7. Workshop in progress

SWOT Analysis

STRENGTHS	WEAKNESSES
- Important water resources - Taxodium forest in Cernica and Nature 200 area - Fertile agricultural lands - Open green spaces on the fringe of Bucharest city - Valuable natural resources: wetlands forest, lakes for recreation and conservation - Proximity to Bucharest - Typical farming tradition - Pastoral landscape within the city periphery - High Biodiversity - Habitat diversity	- Environmental pollution - Chaotic management of the land - Lack of awareness of natural values and public goods - Great potential for sustainable agriculture - Conflicts between urban and rural actors - Missing connections between settlements and nature - Lack of integrated system for collecting agricultural products - Lack of network/system supplying and delivering local agricultural products - Lands of infrastructure (sewage, transport) - Deficiency in aesthetical respect & lack of attractiveness - Low value of nature conservation
OPPORTUNITIES	**THREATS**
- Technological development - Development on typical local products and wood products by integrated locals - Experimental landscape interaction with locals + media - Agro tourism developments - Market systems for local and regional products - Material flow connected to the city - Site specific parks with corridors and pathways network (pedestrians and cyclist - Fishing activities in case of good water quality - Sustainable development of settlements with the interaction with nature and settlements - Use the water improvement quality as an argument to develop green infrastructure - Networks: pastoral (economic) / parks (recreation)	- Impact of liberalization - Urban sprawl - Continuous need for housing - Economic interest in industrial, commercial - Lack of political awareness - Black market of local products - Severe change and degradation of ecosystems

DPSIR - Drivers, Process, State, Impact, Response Analysis

1. DRIVERS - Human Needs:	2. PROCESSES	3. STATE
Urban development Privatization Land use patterns: urban 30%, forest 20 %, water 10%, agriculture 40%	Human activities: Pastoral activities, agricultural loss Conflict of interest in land use Community versus individualism Movement/ growth of population	Ecosystem: Pollution (waste, water, soil and air) Public spaces: (Typology – urban and rural + protected areas and historical evolution
4.IMPACT	**5.RESPONSE**	
Ecosystem services Biodiversity loss Conflict: production, cultural, environment Fragmentation		



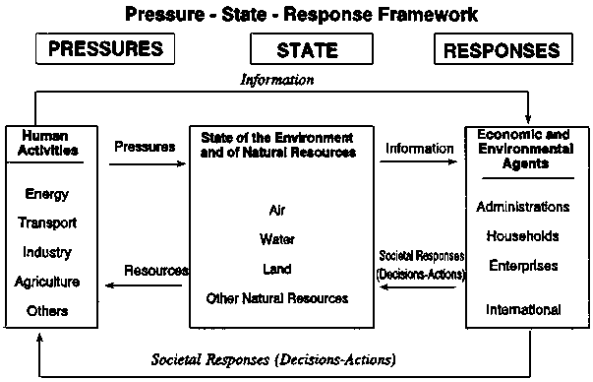


Figure 8. Drivers, Process, State, Impact, Response for Pantelimon

From the analysis a set of recommendations are formulated: Fostering community projects, improvement of the infrastructure improvement, developing a green sewage system which cleans both surface water and treats household waste water, transform agriculture into sustainable forms like smart and ecological agriculture, expand the areas, sites and routing for recreational opportunities, improve in general the accessibility of the land (focusing on water's edges, recreational routes, forest areas).

3.4. From past to present by local expert

By PhD. c urb. Otilia Tărîţă CÎMPEANU - Chief Architect Municipality of Pantelimon

Land use development

Cheap land prices have been attracting people from the city centre to buy land an/or property on the periphery and to live like Pantelimon. 80 % of the total surface in Pantelimon is dedicated for dwellings and also industrial activities as big retail spaces, logistic. Most agricultural lands are planned for retail and logistic activities. Master plans were set up for the city fringe for the next 10-15 years. In the new plan the fringe was further extended. Densities are defined as:

- High: areas just close to the Bucharest city
- Medium: Historical sites
- Low density: last 20 years of development

Economic Profile

Industrial and agricultural activities are the main economic functions in Pantelimon. Proximity to Bucharest market, qualified labels offer good media for agro-industrial activities. The easy access of transport and highways is big advantages. There has been an increasing number of small businesses. Some environmental agencies support modernising the industry of metal industry.
The labour statistics show the following numbers of people working for each sector:

Industry 36%, Retail- Commerce 45%, Agriculture 2%, Services 1%, Home based 11%, Other 5%. The periphery of Bucharest is still undeveloped but in the recent 10-20 years people are buying property for low prices in the periphery between Pantelimon and Bucharest. Small scale residential development is increasing in Pantelimon, especially by residents of the city of Bucharest with an average income.

Tourist Resources

There are a number of archaeological sites and historic churches in the area. Near the monastery there is the Cernica recreation area. Apart form this there are an agro-tourist villa, hunting grounds and many other natural and cultural features that can attract tourists both from Pantelimon and Bucharest. There are not a precise statistics on tourism for the area.

Potential for Agriculture

The areas has a highly fertile soil and well irrigated land in the northern part of Pantelimon. The irrigation system was set up in the Ceausescu era. Main crops are cereals and vegetables. However great areas of land is not cultivated today, which is either grazed as grassland and/or left as old fields for crop rotation. There are no data on the increase of decrease of the area of grassland.
Beside eco-agriculture there is no regulation for the farmers and for agricultural production.

In the communist time a collective land management and agriculture was set up taken all land properties from the public. At the reinstalment of democracy in 1990s all the land were given back to the original owners. Today the area of agricultural land with an irrigation system amounts to 160 hectares. When the land was collective ground the integrated irrigation was easy to manage. But today it is very difficult for a single farmer to use the system.

The collective use of the agricultural land has been under pressure due to the fact the land has been divided within family members when the single owner dies. There is a fish farm in the area, which produces its own fish and also fish brought from elsewhere.

Pantelimon is the last chain of the lakes. The household sewage, industry waste and effluents of agriculture have a negative impact on the quality of the lake water and soil.

Bucharest is divided in six sectors and municipalities. The municipalities manage the roads, infrastructure, etc. Each section is responsible for the maintenance of their managerial area. Bucharest did not succeed to set up a metropolitan system for labour, marketing, communication, etcetera with development perspective. The local authorities of each sector or municipality have the duty for infrastructure.

Land use patterns

The present city fringe is marking the area for urban development, but there are still un-urbanised areas for urban agriculture and defined for agricultural land. There are two important bodies for land use in Romania: the National Institute of Agriculture and the National institute of Cadastre.

The Pantelimon dairy farm has 500 cows which each produce 500 litres milk per year. There is a goat farm with 600 animals, and a farm with 300 pigs. In this area there is around 15 acres of vacant land. The area of grazing lands is not officially registered. In some cases the land is registered for agricultural crops but the owner my change the function into grassland.

There are a great number of small homesteads with a surface of less than 1 acre, which are mostly dedicated for self-subsistence. After 1990 after revolution land is given bask to owners and one owner divided the land within the children and the average size of the agricultural land has become between 0,5 acres-1,5 acres is nowadays.

According to the statistics, parcels larger than 3 acres is assessed to be economically efficient and good for mechanical agriculture. For some agriculture subsidies are available but not within the urban context, so the area in Pantelimon cannot obtain any subsidies.

Vacant and productive land and fragmentation.

The risk of fragmentation is evident because the plot have become smaller and fragmented by ownership and further single housing dwellings. Overlapping productivity and rights for property use for agriculture and housing create risk on lands that are unstable under the pressure of dwellings and division in multi-pieces. The current productivity does not reflect the natural potential, agricultural tradition and local experience.

Main challenges are lack of development and insufficient investments in agriculture. Lack of an integrated modern system for collecting and processing agricultural products is the main limitation. Small production is not profitable because the lack of infrastructure like agricultural warehouses for products designated to Bucharest market. Agriculture will decrease under the present conditions and land will continue to be fragmented.

The Bucharest master plan is limited to the city fringe. From an administrative point of view the Ministry of Development might manage future trends such as preserving agriculture land for the long term. The Ministry of Agriculture is mainly focuses on financing agricultural activities and production. The Ministry of Forestry deals with the forest, while the natural areas within urban periphery are protected by the local and regional branch of forestry. But new changes are expected to transfer nature protection from Ministry of Forestry to Ministry of Environment.

Urban strategy and public involvement

An association in the area is producing grain and has a small bread factory making bread for helping special children in need. On private property it is very difficult when people forbid access to their land. This hampers the connectivity for creating accessible open-green spaces. The only way is to buy the land and to develop a public green space or route. In the zoning plan connectivity is still a big problem. Next to the lakes, there is a limitation of development and construction in certain distance which depends on the dimension of the area. In Pantelimon one is obliged to keep 3 – 5 meters distance between the water's edge and the house to create an open-green zone around the lake. For forest sites the distance is 50 meters. The municipality needs to make a kind of land inventory so to make urban plans and strategy. Currently there is no strategy for agriculture, nor for agricultural heritage. In the urban strategy the dimensions of houses, plots, level of density are defined. The housing strategy also includes the development of apartment buildings in high density areas. The general master plan for the Pantelimon area is not yet improved.

3.5. Exploring strategies for Pantelimon

The working group developed strategies for Pantelimon which were based on three pillars; better solutions for the future, connectivity and vision (Figure 9).

The strategy builds on the strong landscape features in Pantelimon and aims to structure solutions for the future. It makes use of a social-political approach to find different ways in approaching rural fringe of Pantelimon. It concerns legislations for future development, advice on policies and proposals for good land management, legislation for agriculture' land developments. Important is a bottom-up approach to motivate people. An overview can be seen in the scheme hereafter. The groups proposals are elaborated in the sections 3.5.1 to 3.5.4

Elements of a common vision for future for Pantelimon	
A 1 - Defining a common vision for future for Bucharest § 3.5.4	Increasing added value of local products
	Diversification of local products
	Reuse of materials and produce for energy
	Supporting the establishment of quality certification
	Develop a strategy for improving the aesthetic / landscape quality of productive land
	Linking heritage value to products
A 2 - Energy – power plants waste / biomass	Modernise the processing of waste water and combine this with plants for renewable energy
B 1 – Improving connectivity § 3.5.3	A Guide of Image for connectivity
	Green connectivity /green infrastructure /agricultural corridors
	Social connectivity
B 2 - Food Systems with different types	building model on the existing good example in the case of milk farm
	platform for education and good example for other farmers such as renewable energies, sustainable agriculture etc.
	creating small market for local products
Driving Force / Water management	Pollution- sewage and drainage
	Wetlands / nature protection
Aiming for High Quality of Urban Development	Diversification/density of housing
	Creating public spaces
Legislation & Policy in tune with reality	Updating regulations and land use zoning for urban, rural, forest, agriculture, conservation in order to make them comply while integrating current needs of residents, farmers, producers, industry
Public Participation & Political Involvement	Creating a model for collaboration and participation, support NGOs and local authorities who aim to develop this better.

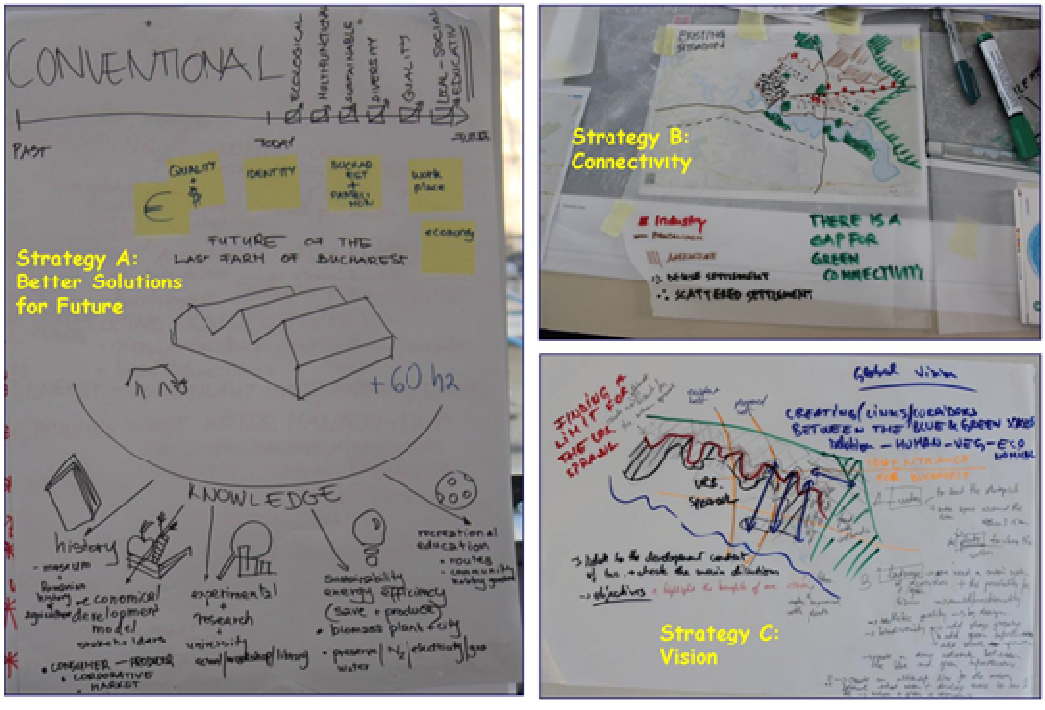


Figure 9. Exploring strategies for Pantelimon; better future, connectivity and vision

3.5.1.Findings ways so to achieve better solutions for developing economic goods

Group A 1 – Solutions (Anna SZİLAGYİ-NAGY and Esra SENOZ)

The team formulated the following proposals:

a. To highlight the importance of the site and to search traditional and conventional ways to improve the landscape values and qualities;
b. Emphasise the ecological, functional functions of the site;
c. To make use of the local, social and educational role of the site;
d. To communicate historical diversity so to analyse the past agriculture;
e. help local farmers and associations to define an economic development model, importance of local products and create a communication channel for local consumers and producers for local markets;
f. Research for universities, and faculty of agriculture on diversification of produce and short chains; including experiments for different agricultural products in the research;
g. Improve the sustainability of the area by using renewable energy and its strategy, produce electricity and gas;
h. Present recreational routes going through the farm land, educational farm for children as the educational functions.

Local experts provided the following comments on this:

- The impact of the proposals on the identity of the settlements and Pantelimon is important;
- One needs to highlight the economic benefits. What these proposals would change in the site how many jobs, etc? Where will the investment come from; are there sources of investment available?
- To relate and explore the development concept with and for Bucharest metropolitan area. This local development strategy with a clear concept for Pantelimon needs to be integrated with concepts and strategies for the Bucharest metropolitan area. This could be done by upscaling.
- Creating jobs is important so linking the main objectives numbers of jobs that can be created is called for.

Figure 10. Finding future solutions for Pantelimon

Conclusions for sustainable development and future solutions for Pantelimon are:

- Economic development should be based on a demand- supply model where the demand side are the residents/consumers and the supply side are the farmers and processors. Shorter links need to be developed to enable consumers to purchase products from the farm (direct sales, hubs or markets). Introducing the concept of Community Supportive Agriculture (CSA) could help solidarity with the farmers and engagement of consumers.
- The larger farms could be multi-productive of 2-3 crops or more, the big farm could be really multifunctional with various type of crops ad produce, as well as recreational and educational functions.
- Organising collaboration of farmers – supporting a farmer association with district of different product group and creating local brands having a kind of eco-product label.
- Economic benefits are education for local children, corporate with local government
- Biodiversity will be sustained by the wind breaking belts and trees, rotation of cultivation and agroecological farming
- Local authorities could create stronger collaborations: supporting local factories, encourage a kind of green corporation, create a kind of working place for local people.
- To provide recreation opportunities for nature and working environment.

3.5.2. Developing economic goods for Pantelimon

Group A2 – Nicolas Triboi, Alina Adascalitei, Jeroen de Vries

Figure 11. Future image for the last farm in Bucharest (Triboi and Adascalitei, 2015)

This group developed a proposal for a multifunctional farm that is well embedded in the landscape. It proposes a modification of the site, changing some uses and create new perspective for pedagogical farm to attract people from Bucharest. It is not only a production-farm and focuses on education, for food, family garden, community garden, arable lands.
From a multifunctional point of view it presents the integration of heritage, farming and natural qualities. Local investors may play a greater role for the new initiatives.

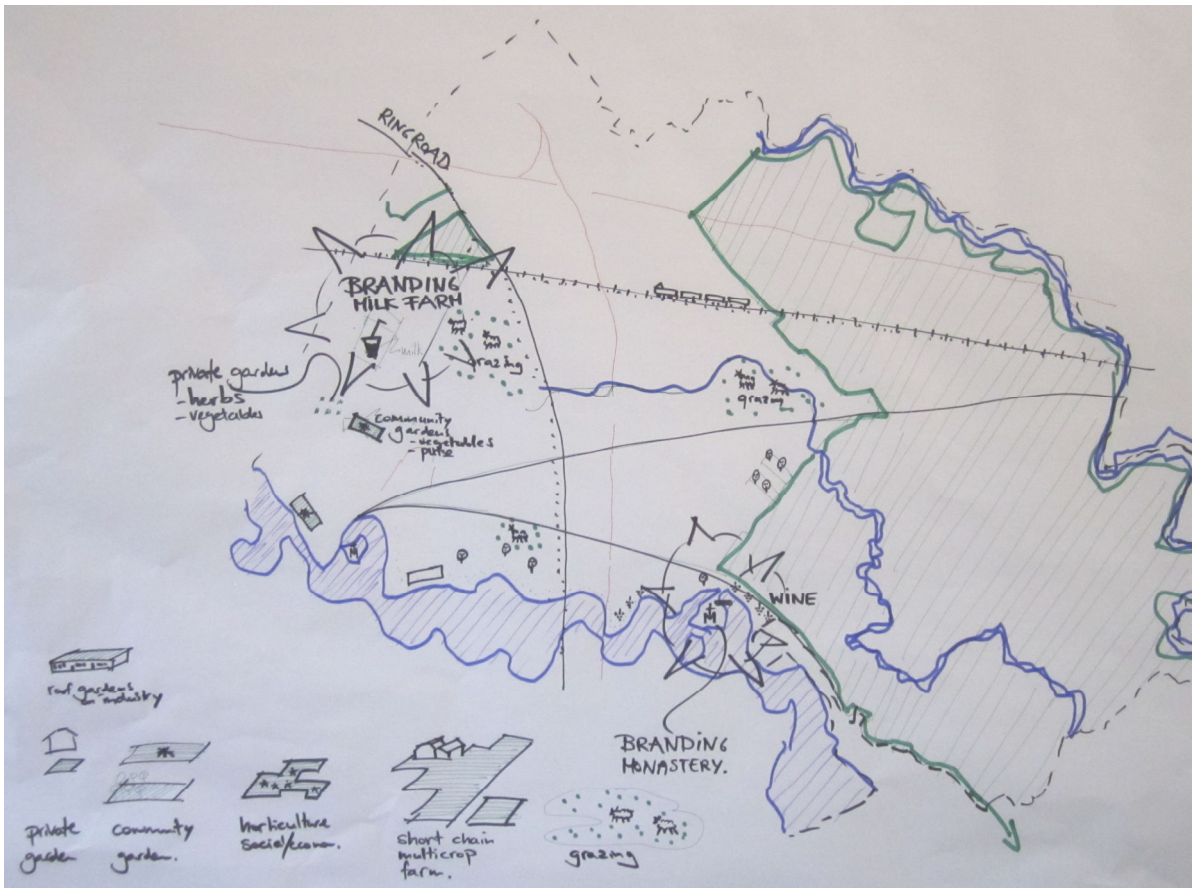


Figure 12. Typology of urban agriculture (De Vries, 2015)

The pedagogical farm could be one type of element in a network of different types of agriculture, urban agriculture and private production in the area that consists of the monastery with wine production, urban pastoralism and production of horticultural in a social setting, community gardens and private kitchen gardens. Figure 12 presents a concept of this in the Pantelimon area.

3.5.3. Improving connectivity

Group B – Sebahat Aciksoz, Emel Baylan, Stefanie Gruber, Nilgül Karadeniz, Evelina Knyzelyte)

The group focused on the connection of green areas, agricultural areas that can be integrated into urban agriculture texture together with other natural areas. Currently there are different types of land use patterns; industrial areas, settlements more scattered around, lakes, forest and agriculture. An effective green infrastructure that connects the various types is lacking. To develop high qualitative urban areas would be a good chance for the city, because the investments could be used for investing in green infrastructure, connections, and public space. Densified settlements are considered to be core areas for social and green/ecological connectivity and connectivity along the water needs to be improved. Recreational routes that connect natural areas and residential areas can provide better opportunities for leisure and recreation.

The proposal highlights green, blue and social connectivity that links hot urban centres, hotspots of heritage and nature values. Around Bucharest the green corridors are linked to the paths of animal tract (sheep and other animals). Recreational routes can be linked to green infrastructure and networks of green spaces.

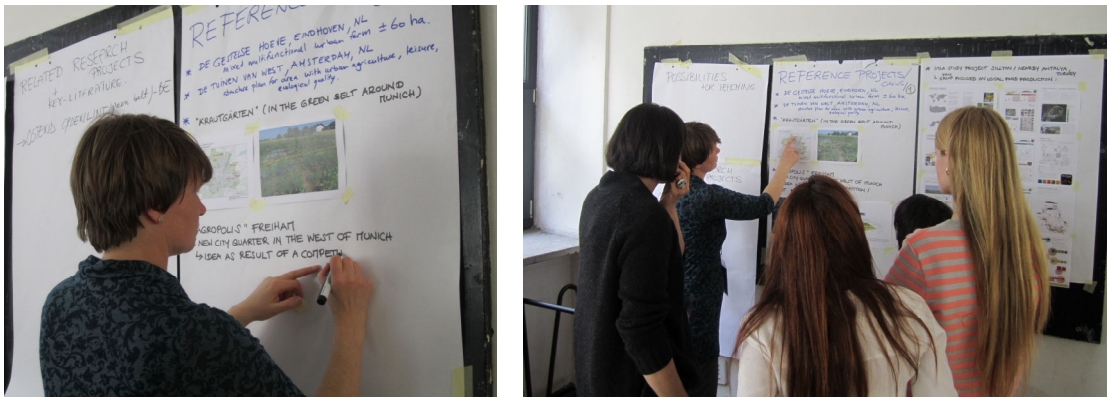


Figure 13. Providing connectivity for Pantelimon

Conclusions

Bucharest needs a strategy 2035 showing the enhancement and better connectivity in different views. In the existing situation, the city has its own circulation system that makes it kind of isolated from the peri-urban area. A tramline providing both physical accessibility and creating market places for local food production was proposed for this area. An example for this can be found in Munich (Bavaria, Germany) with a tramline that connects different parts of the city to the peri-urban area.

Better and effective connectivity can be elaborated for blue, green, blue, productive, and social networks and flows.

blue, green, blue, productive, and social connectivity	
Blue	Strengthen the blue corridors by linking the water features and the accessibility along the water's edge: create a system of the Colentina lakes and the small rivers and brooks that feed it.
Green	Adding small connections by a network of community gardens and green public spaces.
	Connect green elements on the border of Bucharest and in Pantelimon to the natural areas around the fringe.
Productive	Short food chains linking the production area in the periphery to consumers in the city.
	Food connectivity can comprise various crops, produce and include community work and recreation.
	Industrial sites and business areas should be made more attractive by creating leisure areas connected to green infrastructure for working people.
Social	Enhancing social connectivity between different income groups by creating community spaces/gardens, local markets a kind
	Develop training and education centres for nature, food, processing: both for children and adults. Also a training for local how to market of their products.

3.5.4. Defining a common vision for the future

Group C– Visions (Johannes GNAEDİNGER, Caroline HOLZ, Oana CHİRİAC)

The team focused on developing a better infrastructure system, both inside the Pantelimon area and connecting it with the city. They proposition additional roads and a system for slow mobility.

The zoning plan needs better regulation and enforcement to limit urban sprawl, makes sure the access along waterways, the lakes, and through the urban and rural fabric is open to the general public. Regulations are needed to enable urban pastoralism and reserve areas for agricultural production.

A multifunctional, multisectoral vision of landscape quality around the city together with nature conservation, land use, traditional patterns is called for, this could be based on the principles of the European Landscape Convention. Elements are shown in PANTELIVISION 2030.

PANTELİVİSİON - Pantelimon Lake 2030 – A vision for future

- *gradually transitions of scale of spaces and landscape patterns between urban and rural.*
- *create more space for water and accessibility to water areas.*
- *link pastoral activities to water quality management.*
- *create agro-forestry in the green corridors, which is dynamic and productive.*
- *defining zones of that organise different function: creation, multi production, urban agriculture.*
- *identify the groups of actors, key actors, stakeholders for a bottom up approach*
- *set up a common ground to communication of the city council, municipalities, neighbourhood communities, producers, and consumers.*

Two approaches: (1) develop a kind of regional landscape strategy and (2) start with pilot projects on social landscape strategy to raise awareness of all involved.

The local experts added to this that the network should of lines and corridors, should also include the existing nodes in the landscape, such as the heritage sites, focal points along the lake, recreational centres. The vision also needs to include a strategy for governance that is linked to the politics of Bucharest and Pantelimon.

Figure 14. Discussing visions for Pantelimon

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Chapter 4.

Inclusive agriculture and local foodscapes in the rurban area of Munich North

Group Moderator: Jeroen de Vries

Group Members:

Ben ter Mull, Esra Senöz Orsan, Gülin Ozdemir, Jeroen de Vries, Johannes Martin, Meryem Atik, Nilgül Karadeniz, Sena Ceylan, Siri Frech, Valentin Kistler, Vedran Vuković

(Photos Meryem Atík, Stefanie Gruber, 2017)

Group Leaders: Jeroen de Vries and Meryem Atík ***Local Experts:*** Frieder Luz, Fritz Auweck, Siri Frech ***Group Members:*** Ben ter Mull, Esra Senöz Orsan, Gülin Ozdemir, Jeroen de Vries, Johannes Martin, Nilgül Karadeniz, Sena Ceylan, Valentin Kistler, Vedran Vuković

Munich, 2017

4.1. Urban Foodscapes

The theme group of the rurban area explores the foodscape in the north fringe of the metropolitan area of Munich and makes an integrated spatial analysis of traditional peri-urban agriculture and urban gardening activities. It develops an integral landscape strategy which defines how landscape quality can contribute to regional branding and improve the recreational use of agricultural areas. This strategy aims to integrate the demands of refugees related to food plants and plants related to their home countries. It plans for creating spaces of urban gardening in appropriate green areas. The theme group focuses on how the spatial development of the local food system can produce social and environmental benefits.

In the last decade urban foodscapes received much attention and are increasingly included in urban and open space planning. Citizens have a growing awareness of issues concerning their own food. Fragmented urban activities, like urban gardening, play a role as well as allotment gardens and the traditional land-based agriculture, in the vicinity of the city. Both are regarded more and more as complementary components of a regional food system that calls for more innovation (De Vries et al., 2017).

Food, Ecology and Sustainability

International and national, there is a growing trend towards regional products. In this respect, it is essential that the production areas are considered ecological intact, sustainable and beautiful. This results in synergy: landscape perception, natural quality and regional marketing result in an image that also provides an economic value.

Local Food and Territorial Branding

In the metropolitan area of Munich the green belt landscapes provide good opportunities for branding local products. The farms in the Metropolitan area not only produce healthy food, but also contribute to landscape quality while generating an income. The do-it-yourself harvesting fields are a visible result of this. The Metropolitan area, especially the Northern part could use the functions of horticulture and landscape management to enhance its identity, to raise biodiversity and improve the structure of the rurban landscape (De Vries et al., 2017).

Multifunctionality and Agriculture

There are already hopeful beginning activities and diversifications in the agricultural land use such as (1) special seeds farming (local and regional seeds), (2) recreation and event farming including horse farms, (3) self-harvesting and picking farming, (4) self growing farming (Krautgärten), (5) multicultural farms, (6) energy farming, (7) compensation farming, (8) fish and excavation farming.

Key questions for the foodscape working group were:

- Which new forms of farming can contribute to enhancing the local food system and improve the participation and awareness of citizens in the production?
- What is the spatial impact of a new local food system and how can it produce landscape benefits?
- How can the development of the foodscape contribute in an integral way to landscape quality; improving ecological quality and strengthening landscape identity? How can the landscape in this respect be planned and designed?
- In which way can the local food production by farmers and inhabitants contribute to an inclusive development of the region?
- Which new functions for existing rural features and spatial interfaces (markets, farm shops) can be found so as to develop and conserve the cultural landscape and improve possibilities for leisure and recreation?
- How can the transition of the foodscape contribute to the closing of cycles of water, energy, waste and food? How can chains be shortened and synergy created?
- How can foodscapes in the peri-urban area of Munich provide opportunities for local and regional recreation? (De Vries et al., 2017).

The European Commission regards ‘rural areas’ as a spatial phenomenon that extends across regions, landscapes, natural areas, agricultural land, villages and other larger urban centres, pockets of industrialisation and regional centres. It encompasses a diverse and complex economic and social fabric. It is the home of a great wealth of natural and cultural resources and traditions (European Environmental Agency, 1999).

A landscape can be called ‘inclusive’ when it provides a communicative space in which different perspectives, values, identities, preferences and conflicts interest of citizens, inhabitants and organizing actors come together (Kamplage, 2017).

4.2. Study area Munich North

4.2.1. An introduction to the Munich landscape

Munich at the heart of Bavarian highland, is the capital and economy centre of gravity of Bavaria as well as the third largest city of the federal republic. The name of Munich derives from the German for 'by the monks'.

The system of visual axes and canals in the north of Munich, which were left to themselves for nearly three centuries, is steadily vanishing (Pfoser, 2005).

Characteristic landscape elements can be perceived in the northeast area: the network of visual axes and canals; the river valleys between the chains of hills: river Dachau in the West and Isar in the East. The forests to the south of Munich contrast with the heathland in the north and the low-lying moors of the Dachauer Moss area (Pfoser, 2005).

A corridor between the city of Dachau in the West and Munich Airport in the East was a focus area for the forum. This part of Munich's northern city edge consists of the moorland-belt between 'Dachauer Moos' and 'Freisinger Moos' and includes the natural border between the large Munich gravel plain in the south-east and the geologically older tertiary hilly country in the North-West (Figure 1).

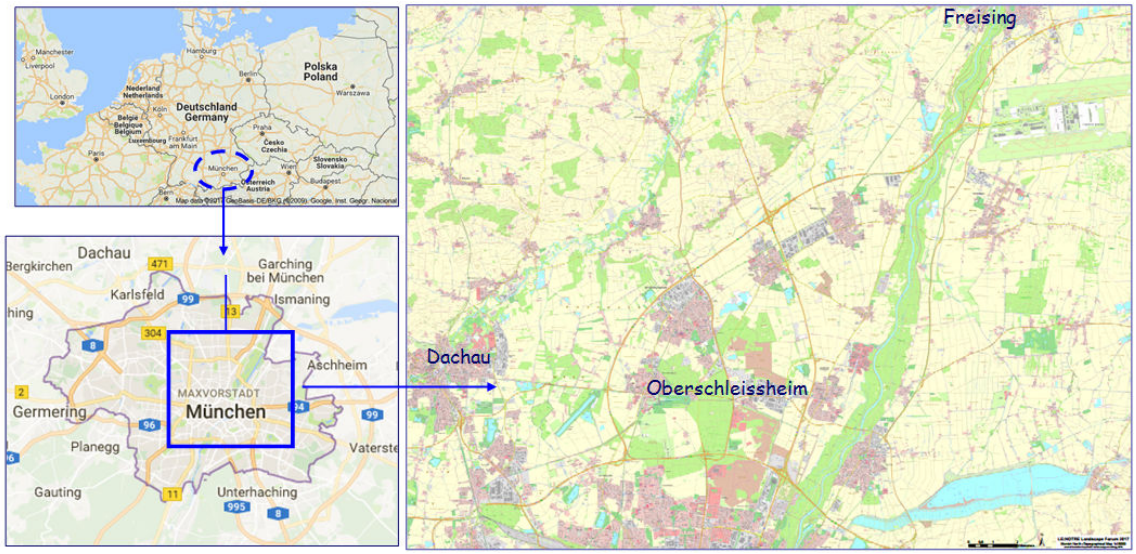


Figure 1. Location of study site, Munich north

Within this landscape water plays an important role: The Dachau-Schleißheimer-Canal in the south-western is a part of the baroque system of canals and visual axes created during the 17th and 18th century. The landscape corridor along the motorway is characterised by gravel-pits and quarry ponds, still in use for gravel excavation or restored as recreation areas. In the east the ribbon of the river Isar natural riparian forests is veined by many brooks, ditches and smaller rivers. Many aspects of this landscape corridor contrasts with the surrounding landscape: functional, ecological, socio-cultural, and aesthetical. It acts as a 'transect' touching different types of landscapes and crosses infrastructural, cultural sites and elements that can function as a landscape laboratory for testing an inclusive landscape approach.

Characteristic elements are the Concentration Camp Memorial where the field of conflict between 'good' and 'bad' heritage, is shown by the famous artists' colony in the moorland of Dachau and the site of the former concentration camp. The Dachau Schleißheimer-Canal as distinctive and protected cultural element. The Olympic rowing regatta course with its more than 2 km long artificial lake in the south of the Dachau-Schleißheimer-Canal was built for the Olympic Games 1972 in Munich. It represents a piece of post-war heritage (LE:NOTRE Institute, 2017).

4.2.2. First impressions of the area

The rural fringe group focused on the peri-urban areas between Munich and Freising. First impressions were:

- Gradual landscape transformation from gravel mining to ponds for recreation and gravel mine into a landscape park.
- Changing patterns in the production system of the land such as food production to horse farm, and recreations.
- Instalment of Krautgärten used by people from different nationalities that allows inclusiveness for different social groups and with low income level.
- Intensively managed and used landscapes with a combination of production, recreation, transport, industry. Gravel pits still exist in the Munich plain.
- Extensive farming runs up to the urban area. Farmers in the rural areas also have new opportunities for offering new products in the urban periphery.
- Protection of local biodiversity through production of local perennials and native plants in case of the Krimmer Farm in Pulling.
- Lack of spatial connectivity between different land uses in one hand; farming, industry, recreation, energy.
- Foodscapes in Munich North have the potential to be well-connected with the residential areas/neighbourhoods.
- Accessibility in the area is hampered by infrastructure (Figure 2).

The multifunctional landscape directly north of Munich has still good connections with the adjoining neighbourhoods. Krimmer Farm in Pulling is a regional seed producer that, support biodiversity in particular. A former gravel pit was transformed into a “lake” with both ecological and leisure function. Urban farming, rental community plots, allotment garden, adventure farming, and pick-your-own gardens are elements of the foodscape.

STRENGTHS
-Facilities used by people for recreation
-Selling local products via websites
-Regional seed production farms

WEAKNESSES

- Weak connection to foodscapes for lower income population
- Bad connection between farmers and the market
- Refugees are not included into creating foodscapes

OPPORTUNITIES

- Development of new forms of farming, such as CSA (Community Supported Agriculture)
- Creating foodscapes in green infrastructure helps to defend it-Creating foodscapes as a potential workspace for refugees
- Developing local brands

THREATS

- Food supply chain for future refugees
- Population and urban growth causing pressure on the surrounding landscape
- - Competition between production of food and crops for energy

4.3. Understanding Foodscapes – in Munich North

Foodscapes as a tool for inclusiveness

The following pillars for inclusiveness of people, product, services and land through foodscapes in Munich North were drawn up:

- Define on the regional level a series of zones: urban - peri-urban - rural and develop for each zone a specific strategy for land-use and inclusiveness.
- Define a set of "Foodscape Typologies" with different context, processes and flows.
- Analyse and use green infrastructure and slow infrastructure to define how these can be spatially linked to specific types of foodscapes.
- Allocating foodscape typologies according to zones, considering accessibility and ecological characters of each area.
- Developing multi-functional use that fosters inclusiveness.
- Diversify food landscapes making them multifunctional and resilient to change (Figure 4).

4.3.1. Defining zones

Three zones were defined for the foodscapes in Munich North: urban, peri-urban and rural. Food production is carried out mainly in peri urban and rural areas. There are potentials for foodscape typologies of private, community, self-sustainable and aquaponics in different location of these three zones. However, it is important to develop producer – supplier – consumer chains that transcend through all zones to make foodscapes accessible and sustain foodscapes (Figure 3).

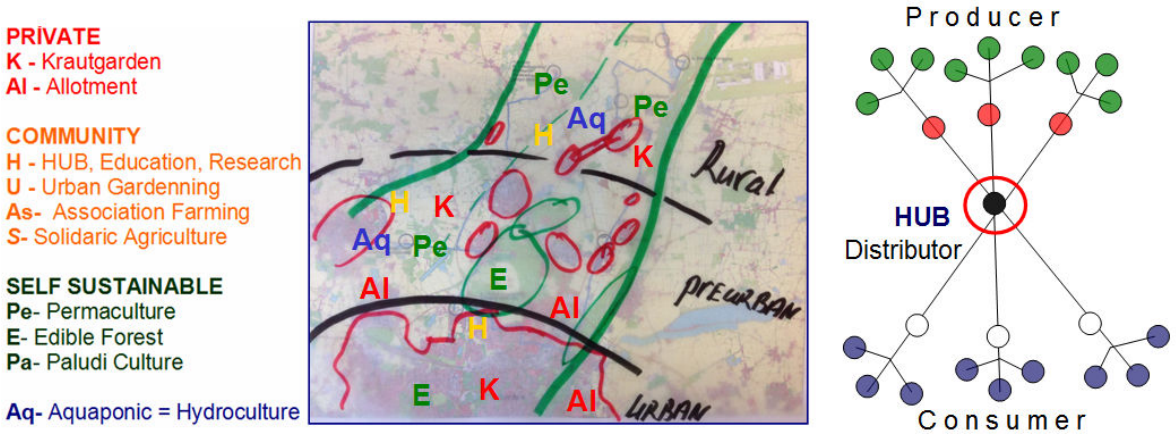
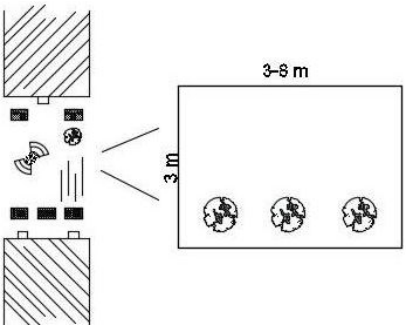


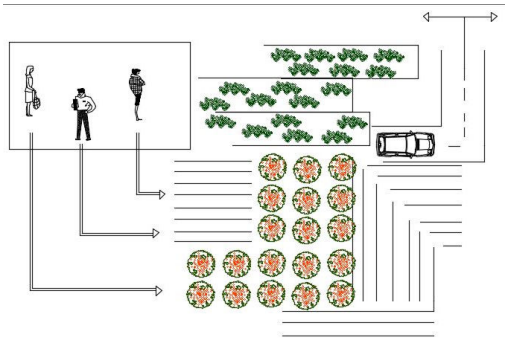
Figure 3. Foodscape typologies in relation to the urban and rural zones and the food chains

Below the set of “Foodscape Typologies” with different context, processes and flows are shown.

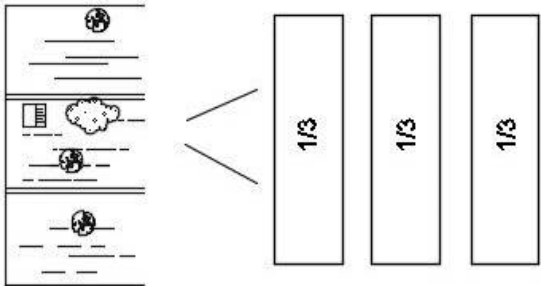
1 – Urban Gardening
- Contemporary form of land use
- Food and material cycle is an advantage
- Multifunctional, social



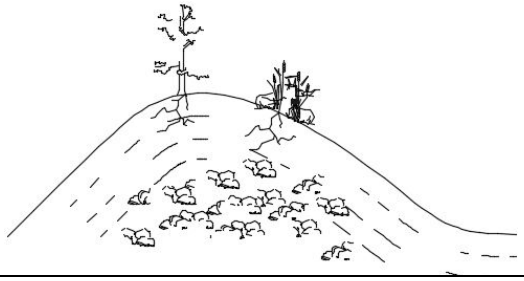
6- - Community Supported Solidary (Agriculture)
- Private
- Small scale
- Scattered network



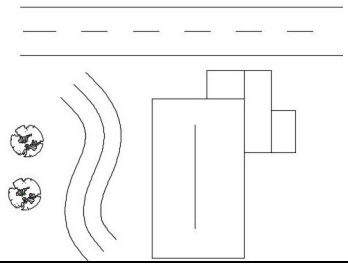
2- Allotment gardens
- Small scale
- Clear Boundaries



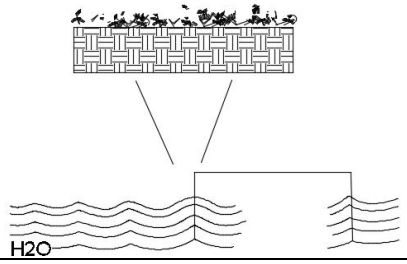
7- Ecosystem support, including permaculture
- Supports ecosystems
- Small scale, integrated
- Self-efficient



3- Distribution and Research Hub, Education
- Social exchange
- Education & multifunctional
- Knowledge hub

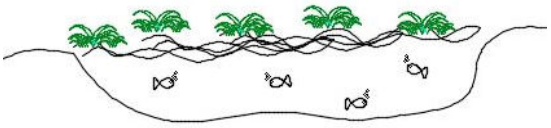


8– Paludi Culture
- Natural
- Re-naturation
- Less infrastructure



4- Edible Forest
- Diversity in small & big scale
- Less infrastructure
- Self sustainability

9- Aquaponics = Aquaculture+Hydroculture
- Artificial environment
- Infrastructure needed



5- Community Supported Farming
- Regional economy cycle
- Producers & consumers
- Bigger cycle

10 – Krautgärten
- Small scale
- Gardens with historic species

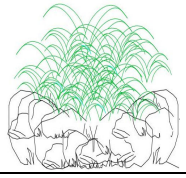


Figure 4. Foodscape typologies for Munich North (by Johannes Martin, 2017)

4.3.2. Garchinger Heide Hof - interactive, inclusive, multi-functional farming

Starting point for an interactive, inclusive and multi-functional farm was to figure out how sustainable food production would be possible in urban periphery. Garchinger Heide Hof was chosen due to proximity to the Munich that already has been branded for its landscape quality and is linked to recreational routes. The proposal includes educational gardens, orchards and commercial market gardening (Figure 5).

The interactive, multi-functional farms work as a catalyst in the food system. The combination of functions makes the farms more sustainable. This type of farms has social, ecological and economic functions that are controlled by a foundation and an association. The functions of the farm are:

- Food production: milk, cheese, vegetables, potatoes, fruits;
- Food-hub: farm shop (that also sells the products of other farmers);
- Education: internships, workshops (cheese making, kitchen gardening, ploughing), and educational gardens for school children;
- Social functions: gardens for newcomers, meeting place;
- Recreational functions: café, terrace, playground, walking and cycle routes;
- Landscape functions: food forest, hedges, tree-lines, natural areas, and wild-flower verges.

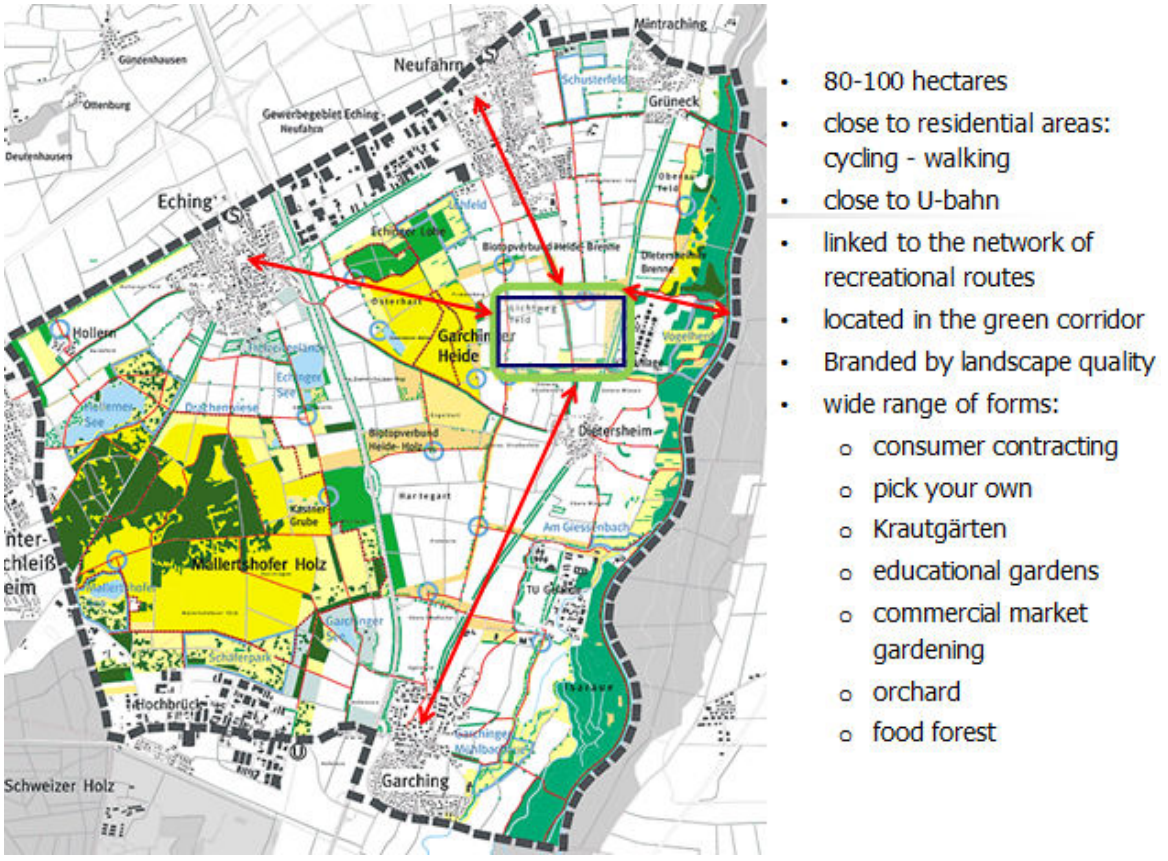


Figure 5. Proposed location of Garchinger Heide Hof

Concept for an interactive, inclusive, multifunctional farm

The primary goal is to set up interactive farming for participation groups of children and school classes, refugees, families, socially disadvantage people which would provide access to healthy food, social and cultural integration, and recreation and help to understand farming. The secondary goal is to maintain and enhance biodiversity, strengthening economical farming, helping to protect and develop a green infrastructure (Figure 6 and Figure 7).

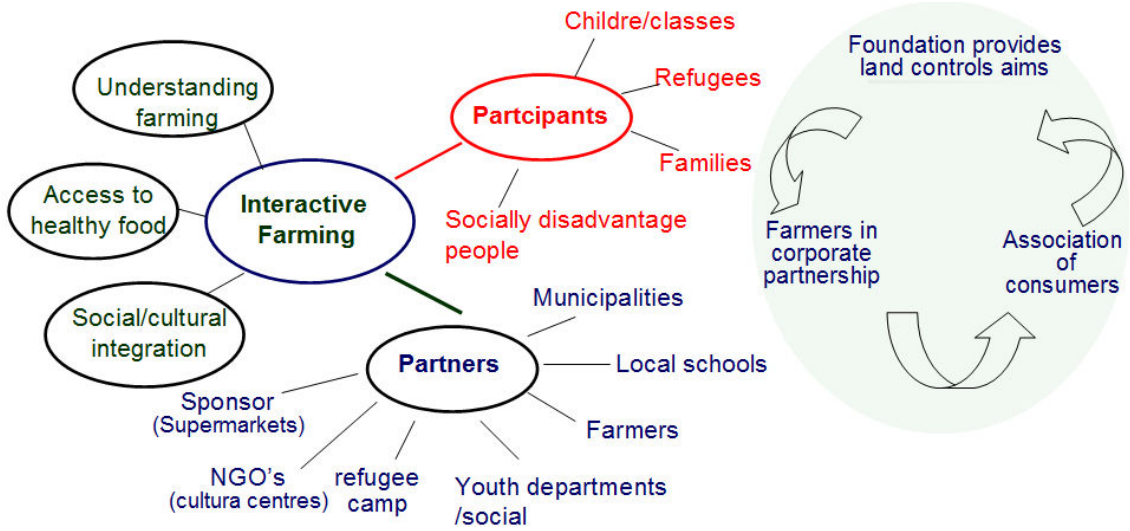


Figure 6. Concept for an interactive, inclusive, multifunctional farm

Figure 7. Multifunctionality in Garchinger Heide Hof

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Chapter 5.

5. Rural Fringe: Foodscapes and Biodiversity Bratislava

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5.1. Introduction

Rurban landscapes transcend between urban and rural where city and nature meets, and where urbanisation competes with agriculture. These transition zones have been identified by academic scholars as suburban, urban fringe, urban periphery, rural hinterland in order to understand their ecological, social and economic values. Recent publications on 'rurban landscapes' have proved that they are very crucial foodscapes for urban population and growing cities.

As a part of the LE:NOTRE Landscape Forum 2020 *Cross-Border Landscapes*, Bratislava we examine the cross-border dimension of rurban landscapes. To explore the aspects of Foodscapes and Biodiversity from a cross-border aspect the working group focused on the area around Kittsee, Jarovce and Rajka where the habitat of the great bustard can be found in the Natura 2000 areas of the Parndorfer Platte-Heideboden, Syslovskepolia, and Mosoni-sík in the border area of Slovakia, Austria and Hungary.

The current production system produces mainly for the national and global market and has hardly any connection with the region and local communities. The cross-border agricultural landscapes are an important habitat of the great bustard (Otis tarda), an endangered species that requires specific agricultural landscape habitats and agro-ecological measures. The existing nature values are threatened.

The future Common Agriculture Policy aims among other things to ensure a fair income to farmers, to rebalance the power in the food chain, to act upon climate change action, to preserve landscapes and biodiversity, and to support vibrant rural areas. The report of the IPES-Food panel (February 2019) argues for a Common Food Policy for the European Union: setting a direction of travel for the whole food system, bringing together the various sectoral policies that affect food production, processing, distribution, and consumption, and refocusing all actions on the transition to sustainability (IPES-Food, 2019).

Multifunctional local and regional foodscapes can contribute to the integration of traditional and recreational agricultural areas. Agriculture may have an important contribution for accessibility and security of food. It can also favour local economy and social cohesion. Overall, case studies show that it is possible for communities, regions, and whole countries to fundamentally redesign their food and farming systems.

The change process can be initiated from a variety of entry points, and does not always begin on the farm with input substitution. Transition can also be kick-started by community-building activities, farmer-researcher partnerships, and even by external shocks that make people question the status quo (IPES-Food, 2018). External shocks or disturbances are often the cause of innovation in systems or transition from one system to the other. The current COVID-19 pandemic is such a shock that shows clearly how fragile our current food system is and urges the need for transformation to a sustainable food system as Carolyn Steel explained in her online seminar on Sitopia for Informed Cities (Steel, 2020).

Foodscapes are understood as all those areas that contribute to food production such as arable land and farms, orchards, allotments and vegetable gardens in combination with the social capital they build. Food and its production may help us connect and find shared interests across cultures. Food production could be re-envisioned as a partnership between consumer associations, foundations guiding the overall goals and corporate partnership of farmers. This would provide opportunities for jobs for disadvantaged groups like migrants and refugees. The connection between people and food should be strengthened to attract children to spend time outdoors, rather than in front of a computer screen. The landscape should give people the opportunity to grow their own food for their physical and mental well-being. Multifunctional, inclusive and organic farms can help to protect and develop green corridors consisting of nature reserves, nature development zones and landscape development areas. Therefore foodscapes should be well connected to the networks of recreation and nature protection to trigger mutual benefits.

Source: Brief for the foodscapes theme of the LE:NOTRE Landscape Forum 2020

5.2. Study area

In the context of the LE:NOTRE Landscape Forum 2020 Cross-Border Landscapes the rural thematic group worked on the area around Kittsee, Jarovce and Rajka and the habitat area of the great bustard (Parndorfer Platte-Heideboden, Syslovskepolia, and Mosoni-sík).In the Middle Ages Kittsee on the Austrian side, was part of the Kingdom of Hungary and until 1920 it belonged to Hungary. Kittsee is famous for its apricot trees and products (Wikipedia, 2020). The village of Jarovce, on the Slovakian side, was first mentioned in 1208 under the name Ban. Until 1947 the area belonged to Hungary and since 1972 it is an official borough of Bratislava (Wikipedia, 2020). Rajka on the Hungarian side is a small village that was established before the 13th century (Wikipedia, 2020).

Bratislava - Kittsee: a peri-urban landscape where a rural Austrian village meets the capital city of Slovakia across an international border. As a result, the peri-urban landscape in this segment is entirely rural with arable strip-fields reaching right to the border. In one sense the peri-urban landscape of Bratislava has begun to spread across the border, but only as far as single family houses are concerned.

One beneficiary of this process is perhaps the local specialty: the Kittsee Apricot. The district has some 35,000 fruit trees and a large number of farmers are dependent on its cultivation for their livelihood. Such an interesting urban – rural contrast can be considered as a very unique landscape situation and perhaps a strong potential for sustainable development. One of the strategic scenarios could build upon this quality and use (urban and peri-urban) agricultural landscapes as a shared green centre of Bratislava and Kittsee (Stiles et al., 2018).

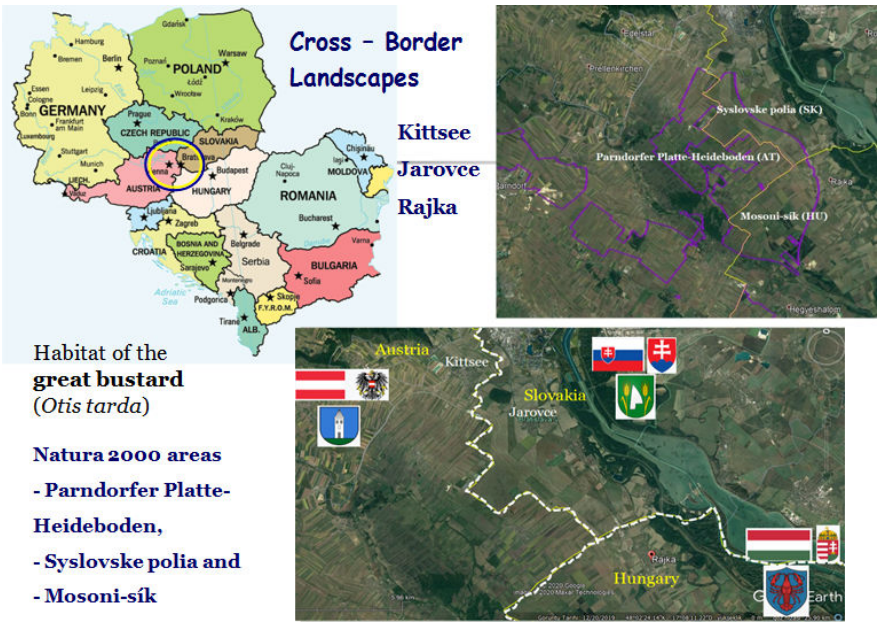

Figure 1. Location of the study area with the Natura 2000 areas

5.3. Working process

First the working group selected information on the aspect of foodscapes provided by the key note speakers, the local experts and the winning entries of the LE:NOTRE international student competition Cross-Border Landscapes. During the interactive working day the group members collected step-by-step material in an online tool provided by mural.co. The interactive work was based on the Nominal Group Technique (NGT), which is a structured method for group brainstorming that encourages contributions from everyone and facilitates quick agreement on the relative importance of issues, problems, or solutions. This consisted of the following steps:

a. Meeting with group members and participants,
b. Defining aspects of foodscapes and biodiversity from the keynotes,
c. Discussing challenges for cross-border landscapes with regard to sustainable agriculture, habitat conservation and regional and local developments.

On the basis of the first results of the mural the group further elaborated the material by carrying out an additional desk study (e.g. on the outcomes of the BAUM2020 conference, European food strategies and the spatial aspects of the habitat of the great bustard), and studying the results of the international student competition. The Urban Development Study of the BAUM project (Städtebauliche Studie der Entwicklung des Grenzgebietes von Bratislava und den umliegenden österreichischen Gemeinden) provided a sound basis for the development of the proposed strategy (BAUM, 2014).

The land use pattern around the three villages was analysed based on satellite imagery combined with the CORINE (Coordination of Information on the Environment) Land Cover (CLC, 2018) imagery. All group members contributed to the analysis and the conclusions.

5.4. Biodiversity, agriculture and foodscapes in (peri-)urban areas

Since the first urbanisation in the past, food was generally produced in rural areas, where after it was transported and consumed in cities (Hidding, 2006; Bosschaart, 2015). However, with increasing urbanisation, current agricultural practices are often challenged to provide sufficient locally farmed food to feed growing cities, resulting in ever more industrialised and globalised food production (URBES 2014). Increasing urbanisation, concerns for food security, climate change impact have brought the foodscapes in cities and metropolitan areas on the agenda.

Food systems link rural and urban communities and territories in a region within a country, across regions, and sometimes between continents. Cities and urban food supply systems play an important role in shaping their surrounding and more distant rural areas where land use, food production, environmental management, transport and distribution, marketing, consumption and waste generation is concerned (FAO, 2017).

Bosschaart (2015) articulated that urban foodscapes break the traditional view on cities and rural areas, by re-locating food production - originally a rural task – once again partly in the city. But more in essence, cities also emerged on places where fertile ground was available.

Recently, it is argued that some of the most complicated urban challenges in relation to food occur at the edge of cities, as they are themselves transformed by both growth and shrinkage (Parham, 2018).A major concern is to support urban food supply and sustainability which heavily rely on the allocation of land-use and preservation of already existing arable lands for food production. In 1990's in many European cities the food production was mainly in "allotment gardens". By urban growth and sprawl food landscapes were transformed into built up areas and developed into green belts around cities. Recently in order to maintain food security for the increasing urban population, a new type of agro-urban landscapes and foodscapes around cities occur.

The urgency of the urban food challenge highlights the advent of the city as a site of social and ecological innovation/transition with respect to the food system (Moragues-Faus and Morgan, 2015). This transitions do not evolve only initiatives for sustainable and organic food, but also preserving agricultural capacity of urban and peri-urban areas and to maintain food production in rurban landscapes.

The European Commission’s Food 2030 initiative has been pivotal in putting food systems on the agenda. One of the major global challenges is that over half of the global population is urban and where by 2050 an additional 2.5 billion people are expected to live in urban areas. The fact, as urban areas currently consume over 70 % of the global food supply (Magarini, A., Porreca, E., 2019), urgent need is to be maintained for food safety of urban populations.

To boost sustainable food policies in Europe, the Milan Urban Food Policy Pact (MUFPP) was signed on 15 October 2015, with a framework for cities and international stakeholders that are active in drawing up innovative urban food policies for the management and governance of local food systems. In 2019 the MUFPP was adopted by mayors from 200 cities around the world

who state that food can be an entry point for the sustainable development of growing cities (Magarini and Porreca, 2019).

In early 2016 the MUFPP Secretariat and the FAO started developing a monitoring framework and in 2017 a refined list of 44 quantitative and qualitative indicators was released by the FAO's team of experts (Magarini and Porreca, 2019). One of the categories was **Urban–Rural Linkages** and related to Food Production key principles were:

- surface area of (potential) agricultural spaces within the municipal boundary;
- allow and promote agriculture production and processing in the municipal area;
- secure rights over agricultural land for food production on agricultural land in the municipal area.

The Food 2030 initiative of the European Commission is developing a framework geared towards highlighting priorities and creating efficient investments for food production taking into account the fact that 75 % of Europeans living in urban areas.

Urban landscape character has been influenced by the evolving interactions between people and their lifestyles, food and city form where the interaction between people and food has a strong influence on the form, function and character of the urban 'foodscapes' (Roe et al., 2016) as well as the biodiversity.

"Biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems. Agricultural biodiversity refers to all ecosystems and life forms directly related to farming (Convention on Biological Diversity or CBD, article 2; United Nations, 2018; ECA, 2019). From this perspective agricultural biodiversity in urban foodscapes serves multiple ecosystem services both for crop production, urban ecology, and health urban environment. Biodiversity is crucial for food production system since food security heavily depends on nature, and well functioning ecosystems. Therefore nature protection provides a significant contribution to the sustainability in rurban development and the viability of agriculture both in rural and urban areas.

The renewed CAP should pay specific attention to farmers acting within or close to Protected Areas and Natura 2000 Sites, engaged in environment friendly agriculture and working in partnership with nature conservation authorities, in order to recognise their work and reward their efforts (EUROPARC, 2018).

Urban agriculture is the practice of cultivating food in an urban environment. In an ideal situation, urban agriculture represents a system in which environmentally sustainable cultivation practices, the local economy, and relationships between people intersect, creating a thriving local food system, strong communities and ensuring greater access to healthy, seasonal and local food and ecosystem services while at the same time increasing urban food security (URBES, 2014).Here, urban agriculture is seen as way to connect nature to the cities and people related to the production in allotment gardens, community gardens, community farms, commercial farms, institutional farms, private gardens in urban and peri-urban areas.

Planning should aim to develop an urban rural continuum that links biodiversity and agriculture (Figure 2). Challenges of bringing urban and rural together help policies for resilient cities (Forster and Escudero, 2014). With their hinterland and peri-urban areas, their livelihood is based or the availability of land. Thus they can become food security hubs and net producers of food (Cabannes and Marocchino, 2018). Planning to link biodiversity and agriculture in rural-urban-rurban interface opens the pathways for resilient cities and food systems.

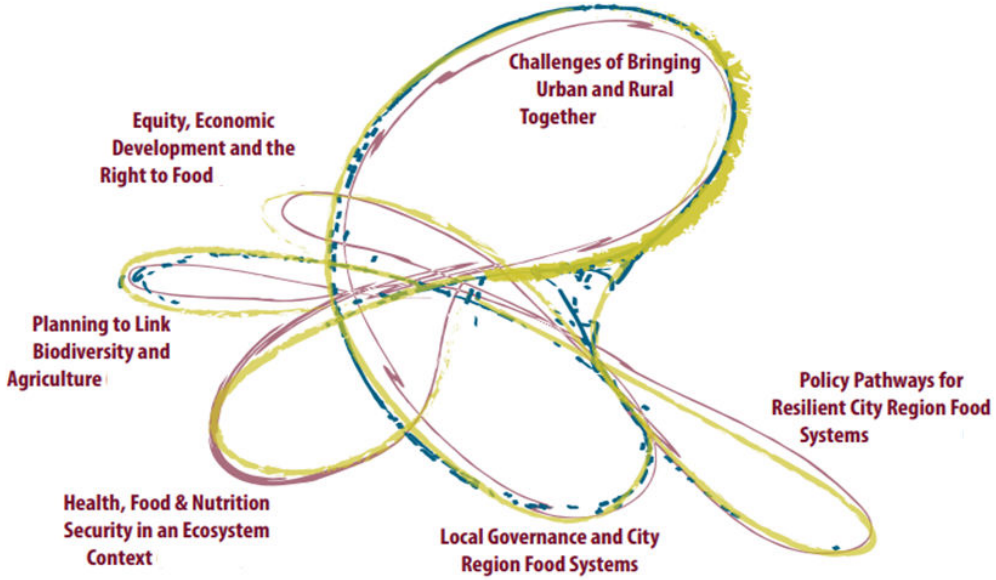

Figure 2. Structure for city region approaches to food, agriculture and natural resources (Forster and Escudero, 2014).

Challenges of Bringing Urban and Rural & Biodiversity and Agriculture together

As more and more agricultural activities are taking place in the city, new ties between urban dwellers and farmers are constructed. Food and agriculture are becoming reasons to go beyond the urban-rural dichotomy model in designing the city (City Region Foodscapes, 2018). With regard to connecting urban to rural, according to Stiles et al. (2018) the overall urban-regional system included the following categories:

- **Suburban area:** generally lower density contiguous built-up areas attached to inner urban areas and where houses are typically not more than 200 metres apart;
- **Urban fringe**: a zone along the edges of the built-up area, consisting of a scattered pattern of lower density settlement areas, urban concentrations at transport hubs and large green open spaces;
- **Urban periphery**: a zone surrounding the main built-up areas with a lower population density, but belonging to the functional urban area; this can include smaller settlements, industrial areas and other urban land uses;
- **Rural hinterland:** rural areas surrounding the peri-urban area, but within the rural-urban region.

Rurban refers to the transition areas in between urban and surrounding rural peripheries with multilateral meanings and functions. Rurban landscapes reflect the process of urbanisation, state of natural and cultural environment prior to urban development, offer vibrant and productive agricultural fields and communities and refuge for biodiversity with flora, fauna and their habitats. The benefits of well-managed natural resources in rural areas including soil, water, and biodiversity go well beyond the production of food, fibre and fuel products in agriculture (Figure 3). The multiple benefits of protected and managed rural areas include multifunctional landscapes that:

- can help mitigate severe weather from drought to flood conditions;
- balance agricultural production with biodiversity protection;
- bring aesthetic and recreational value with economic and tourism value;
- provide clean water to downstream uses including urban water sources, etcetera.

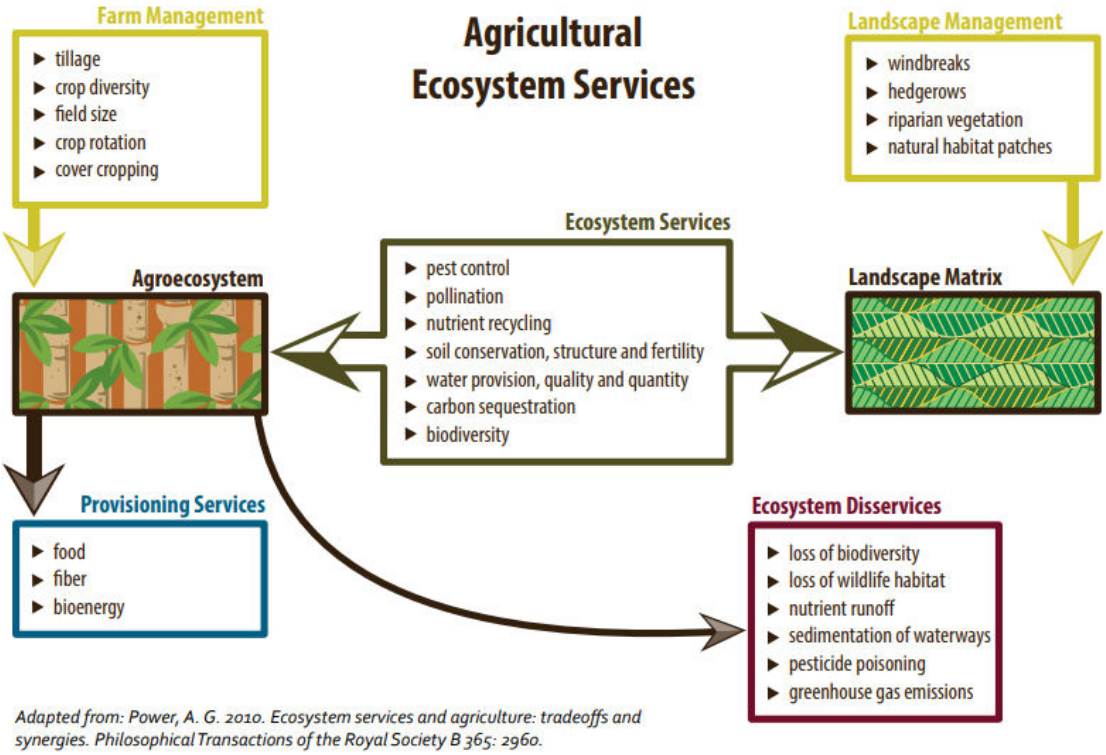

Figure 3. Agricultural Ecosystem Services (Forster and Escudero, 2014).

Biodiversity refers to the variety of life and its processes and is closely associated with ecosystems and habitats (European Commission, 2020).According to Forster and Escudero (2014) **Agricultural biodiversity** (or agrobiodiversity) is a broad term that includes all components of biological diversity of relevance to food and agriculture, where all components of biological diversity support the agricultural ecosystems (European Commission, 2020), also named agro-ecosystems. These systems foster variety and variability of animals, plants and micro-organisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem, its structure and processes.

The European Union defined three key sectors in the Biodiversity Strategy and nature restoration: construction, agriculture and food and drink. Agriculture plays an important role in safeguarding biodiversity in farming and rural systems. Therefore one of the priorities in the new EU-wide Biodiversity Strategy is increasing organic farming and biodiversity-rich landscape features on agricultural land.

Farmland birds and insects, particularly pollinators, are key indicators of the health of agro-ecosystems and are vital for agricultural production and food security. Improving the condition and diversity of agro-ecosystems will increase the sector's resilience to climate change, environmental risks and socioeconomic shocks, while creating new jobs, for example in organic farming, rural tourism or recreation (European Commission, 2020).

5.5. Pattern of foodscapes in the cross-border area: Slovakia-Austria-Hungary

The cross-border area encompasses three cities in each of the countries studied: Kittsee, Jarovce, and Rajka. They are bound by the extensive agricultural land south of the Danube River and the city of Bratislava (Figure 4). The foodscape pattern is analysed based on satellite imagery of each of the cities combined with CORINE (Coordination of Information on the Environment) Land Cover (CLC) imagery.

Figure 4. Overall cross-border site area (Google Earth, earth.google.com/web/).

The area shows landscape characteristics of a rural agricultural area, with respective differences in the type of crops cultivated within each zone. A combination of arable land patches and narrow corridors of hedgerows and rural roads create the overall mosaic of the landscape. Each town, with the exception of Bratislava, lies as a small nucleus within this composition.

Different agricultural patterns create distinctions between the fields of each city; the orchards of Kittsee are highly characterised by narrower planting lines, while in Jarovce and Rajka the land consists of larger parcels. These create distinctive visible landscape areas. The ring road network connecting to Bratislava cuts through the overall landscape, creating an infrastructure barrier between the fields of each place. The arterial road running along the Danube river also breaks the connectivity between the riverside patches and the agricultural fields.

5.5.1.Kittsee: rural-urban setting

The area of Kittsee is located south-west of the main city of Bratislava, with adjoining agricultural areas on the urban periphery. The landscape is characteristically distinct; linear patterns of apricot orchards and wheat field surrounding the main city (Figure 5, Figure 6). The local variety, Kitseermarille, is known as one of the most popular apricot varieties in the world. The fruit is also locally processed into various food and delicacies, becoming a regular feature in the town's annual summer festival. The event, located in the Kittsee Palace (Kittsee Schloss), is a main attraction and holds many of the town's community activities (Figure 7, Figure 8, Figure 9).

Figure 5. Satellite imagery of urban-rural area in Kittsee, Austria (Google Earth, earth.google.com/web/).

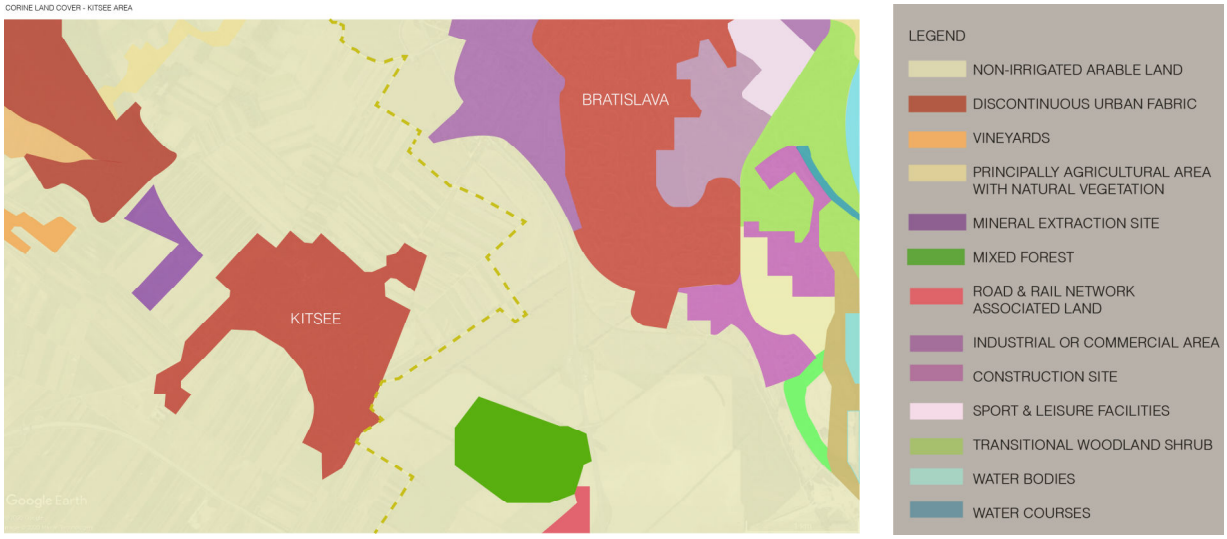

Figure 6. CORINE Land Cover Imaging of Kittsee area (https://land.copernicus.eu/pan-european/corine-land-cover/clc2018).

a *b*

Figure 7. Kittsee urban pattern (a) (Google Earth, earth.google.com/web/), view of Kittsee main square (b) (https://de.wikivoyage.org/wiki/Kittsee#/media/Datei:Kittsee_Busbahnhof.jpg)

a b c

Figure 8. Kittsee orchard patterns (a) (Google Earth, earth.google.com/web/), view of Kittsee apricot orchards (b) (https://www.flickr.com/photos/70811366@N08/10382241404/in/photostream/), view of Kittsee wheat fields (c) (https://www.flickr.com/photos/70811366@N08/10382310775/in/photostream/)

a b c

Figure 9. Kittsee Schloss park (a) (Google Earth, earth.google.com/web/), view of Kittsee Palace (b) (https://www.facebook.com/schlosskittsee/photos/a.215435965308755/1098285987023744), apricot delicacies on display during Kittsee summer festival (c) (https://www.sommerfestival.at/wp-content/uploads/2019/01/Bauer009-768x511.jpg)

5.5.2. Jarovce: rural-urban setting

The town of Jarovce is part of the green belt of Bratislava. The landscape is marked by extensive parcels of wheat fields, separated by the freeway that runs from the Austrian border towards Bratislava (Figure 10, Figure 11). One main feature of the area is the Jarovce Bažantnica (Pheasantry), which historically has been part of the Kittsee Palace prior to the separation of countries within the area. The pheasantry is a popular hiking area and is linked to the town of Kittsee through smaller roads. The land also features inland lakes, some resulting from past mineral exploration, occasionally used as recreational spots by residents. On the eastern border, the land features the Jarovce Rameno, which is the arm of the Danube, where construction is ongoing for a recreational water resort (Figure 12).

Figure 10. Satellite image of the area in Jarovce, Slovakia (Google Earth, earth.google.com/web/).

Figure 11. CORINE Land Cover Imaging of Jarovce, Slovakia (https://land.copernicus.eu/pan-european/corine-land-cover/clc2018).

a b c

Figure 12. Jarovce urban pattern (a), Jarovce fields pattern (b) (Google Earth, earth.google.com/web/), Jarovce pheasantry garden (c) (https://www.facebook.com/slovenske.pamiatky/photos/a.680184832081232.1073741850.424670330966018/692424914190557)

5.5.3.Rajka: rural-urban setting

In comparison to Kittsee and Jarovce, the town of Rajka appears most dense and urbanised (Figure 13, Figure 14). However, in contrast, the town is bordered by a large forest area around the Hungarian arm of the Danube (Mosoni Danuj), which has also become a regular camping and hiking destination. The wheat fields of Rajka also appear to be extensive, however the parcelling seem lesser in dimension compared to Jarovce. An agricultural association is known to be present in the southern area of the town (Figure 15).

Figure 13. Satellite imagery of urban-rural area in Rajka, Hungary (Google Earth, earth.google.com/web/)

Figure 14.CORINE Land Cover Imaging of Rajka, Hungary (https://land.copernicus.eu/pan-european/corine-land-cover/clc2018).

a *b* *c*

Figure 15. Rajka urban pattern (a), Rajka fields pattern (b), Mosoni-Dunaj (Danube arm) forest area (c) (Google Earth, earth.google.com/web/)

5.6. Cross-border land use strategies

Based on the land cover and land pattern observations, several cross-border strategies may be formulated to better integrate the foodscape between the three countries. Relations may be made by strengthening a network of fruit orchard varieties between the three cities, developed in consideration with ecological farming methods. Meanwhile, in countering the fragmentation resulted from the intervention of large transportation infrastructures, green urban parks may be set up along the areas, especially in border stations and train station areas. The parks may also host community and/or trade activities to promote the products of each foodscape region. The presence of distinct recreational spots in each city may also be utilised for holding regular events relating to the city's agricultural products and biodiversity conservation efforts.

Governance and Policies

The main (draft) policies on an (inter)national level consist of the Common Agricultural Policy (CAP), the draft for a Common Food Policy, the European Regional Development Strategy and the national policies of Austria, Slovakia and Hungary.

The European Union's CAP aims at maintaining rural areas and landscapes across Europe, support farmers and improve agricultural productivity, ensuring a stable supply of affordable food and recently and help tackle climate change and the sustainable management of natural resources.

Better care for the environment and climate will be a core part of the CAP's business (European Union, 2019). Three of the policy's nine "specific objectives" will concern the environment and climate. These objectives will be as follows:

- contribute to climate change mitigation and adaptation, as well as sustainable energy;
- foster sustainable development and efficient management of natural resources such as water, soil and air;
- contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes.

The CAP mainly focuses on agriculture production while the report to develop a Common Food Policy introduces a more integral strategy that incorporates the consumer aspects, the food chains and healthy diets.

However, nine goals for sustainable development in the frame of future CAP can act as guidance for rurban foodscapes (Figure 16). Caring for peri-urban areas will basically support preserving landscape and biodiversity between urban and rural areas. Vibrant rural areas around cities safeguard food and health quality and unsure rural power in food chain. Moreover, adaptation of cities to climate change necessitate a strong green infrastructure network that links cities, people, and biodiversity across rurban landscapes.

Figure 16 The nine goals of the future CAP (Source: Key Policy Objectives of the Future CAP)

Goals of the Common Food Policy

The Common Food Policy introduces a set of short term and long term interventions for each objective. For instance reform the CAP P1 direct payments mechanism (Figure 17) by: i) shifting from area-based logic to composite criteria (labour intensity, farm size, regional specificities etc.) with mandatory redistribution to small-scale farms; ii) capping payments to individual farms; iii) providing positive definition of active farmer at EU level; iv) introducing minimum% (instead of ceiling) for payments to young farmers. The proposed interventions can act as a guidance for the step by step approach in the cross-border area.

Figure 17. The objectives of a Common Food Policy: Five Paradigm Shifts (IPES-Food 2019)

The European Territorial Cooperation (ETC), also referred to as Interreg, is an objective of the European Regional Development Fund (ERDF) and the EU Cohesion Policy for the 2014–2020 period. ETC provides a framework for the implementation of joint projects between national, regional, and local players from different member states (BMNT, 2019). Here, rural and agricultural national policies differentiate from country to country.

Developments in Slovakia

As a result of economic growth in Slovakia, future migration may be expected of rural population to urban areas. Currently, Slovakia is the second least urbanised EU country. The population remaining in rural areas needs to be provided with acceptable living conditions with sufficient options to conserve rural values and develop the regions (Ministry of Agriculture of the Slovak Republic, 2009).

Decrease in biodiversity in agricultural land affected mostly the area of lowlands and highlands as a result of intensive land exploitation and management, ploughing up grasslands, draining wetlands and degradation of xerothermic sites. The mountainous and sub-mountainous regions where the valuable areas with high biological and landscape diversity have been conserved are better off.

For the sake of restoration of ecological stability and character of the agricultural landscape the enforcement of the protection of landscape elements is required. This protection is only gradually implemented into the praxis. (Ministry of Agriculture of the Slovak Republic, 2009).

Developments in Austria

Two thirds of Austria's population live in rural areas. In many spheres of life regional identity is increasingly gaining popularity, for example in the culinary sector and in tourism. Nevertheless, the attraction of cities is still unbroken. The "Master Plan for Rural Areas" is a central instrument for strengthening Austria's municipalities and regions. In the period of the European Structural and Investment Fund 2014–2020 Austria is participating within the framework of the objective ETC in a total of seven "trans-boundary" programmes, three "trans-national" programmes as well as in EU-wide network programmes (BMNT, 2019).

Austria's national CAP Strategic Plan for the 2021–2027 focus on climate measures as well as on sustainable, diverse agricultural and forestry practices and on vital rural areas. Austrian family farmers maintain the country's unique cultivated landscape, supply the population with high-quality food and are committed to climate protection. Dynamic rural areas ensure quality of life and guarantee food security (BMNT, 2019).

Developments in Hungary

At the national level, the National Development and Territorial Development Concept is based on Hungary's regional development plan. The plan defines a vision for Hungary's regional development to 2030. Hungary also has a National Rural Development Strategy (2012-2020),

which is managed by the Ministry of Agriculture. The strategy explores the development challenges of agriculture, rural development, and food sector and environmental protection. Similarly, the Rural Development Programme (2014-2020) is focused on supporting agriculture and people living in rural areas. In 2018, responsibilities for rural development were moved to the Ministry of Agriculture, which is responsible for the Rural Development Strategy and the Rural Development Programme 2014-2020 (OECD, 2019) resulting a policy integration between agriculture and rural development.

According to Balázs (2014) local policies also have a crucial role in facilitating local sustainability transitions in Hungary. The city council has developed various strategic documents concerning housing, employment, town development, tourism, waste management, environmental protection, transport and culture. It is exactly in this context that the G7 countries initiative would like to shape the direction of the local food system according to the network economy – from the local through to the regional towards the national and global (export-oriented) level.

A survey on local food issues, showed that access to local products is very limited. The European Regional Development Fund helped for campaigning for sustainable food consumption and production, for developing the necessary local food infrastructures and schemes, and for organizing collective marketing and quality assurance of local quality products. Later, institutional support at the local level was provided by the Hungarian national rural network in the form of short-term technical assistance and advice on good practices, training to develop knowledge for further development (Balázs, 2014).

Conclusion on the national food policies

In Slovakia, cities are expected to grow due to migration from rural areas. This one hand could help to maintain ecologic stability of agricultural landscapes in shrinking rural areas and other hand requires adapting food security and fair access for city dwellers. Spatial transformation of peri-urban areas and encouraging foodscapes around the cities will be a future policy tool for rurban landscapes.

On the contrary the majority of the population lives in rural areas in Austria and branding and regional products are highly valued where family farming help to safeguard rural communities and traditional land use patterns. Agriculture that has a trans-boundary branding and EU - wide networking can strengthen the vitality of Austria's rural and regional landscapes.

In Hungary the National Rural Development Strategy and Programme covers food, agriculture, rural development and environmental protection. City councils can develop strategic policies for the food system which can help to integrate sustainable foodscapes in local and regional developments.

5.7. Transborder strategies for foodscapes and biodiversity

5.7.1. Main challenges

The main challenges in this area for developing an integral strategy for regional producers, habitats, landscape and economy are:

- Moving the focus of the economy from a global open market system to one grounded on a territorial basis.
- Improve understanding of different social and cultural groups across the borders and within the communities by strengthening communication and joint perception (in Kittsee 40% of the population is of Slovak origin, and in Rajka it is around 50%).
- Increase public involvement in regional matters.
- Make use of regulations for farmers to receive subsidy to support biodiversity and ecosystem services.
- Anticipate a positive attitude to the nature based development in the landscape by showing the economic, social and environmental benefits.
- Improve understanding of the relevance of the habitat of the great bustard as a guiding species for biodiversity.
- Investing in landscape values.
- Show local communities how sustainable foodscapes can be beneficial to their well-being and welfare.

5.7.2. Otis tarda as a guiding species for agro - biodiversity

The great bustard is a species that is protected by the bird directive and creating favourable conditions for this bird can go hand in hand with developing a sustainable type of agriculture. Austria still has a viable population and the habitat has in principle a good quality. An important part of agriculture changed to organic methods. Several projects for protection have been carried out and public awareness is raised by creating information panels and bird watching stations (Figure 18, Figure 19).

Austria and Hungary have been very active in Great Bustard conservation in the last years. After two Austrian LIFE and LIFE+ projects and one LIFE project in Hungary now both EU-countries want to start together a huge cross-border protection project for Great Bustards in Central Europe. Based on the great success of the former measures the objectives of this LIFE project are to continue intensive habitat management efforts, reduce the threat of collision with power lines - for many years the no. 1 mortality factor for Great Bustards - and reduce predation. The LIFE project aims to support and maximise the effectiveness of the cross-border protection in Austria and Hungary through coordination of conservation measures and optimal communication (LIFE+ projects Great Bustard – 2020).

a

B

Figure 18. Bird watching station (photo: J.de Vries) (a); Information panel LIFE+project 'Grosstrappe'(b)

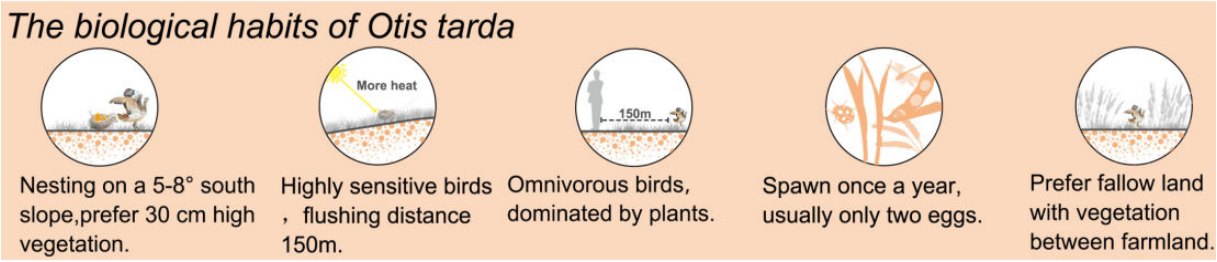

Figure 19. Interpretation of biological habits of Otis tarda (source:1stprize of Student Competition-Mobius Plan)

The area has good qualities for the habitat (Table 1) and there are some general threats to the species: The main threats to the Great Bustard are the loss and degradation of its habitat through agricultural intensification, land-use changes and infrastructure development, increased mortality caused mainly by power lines and reduce the productive success due to high-levels of nest destruction by mechanised farming and high chick mortality through predation and starvation.

Table 1. Habitat requirements of Great Bustard

Landscape	Lowland, undulating open countryside, clear views in 3 directions of 1 kilometre
Biotope	Natural grasslands, warm open areas like steppe Agricultural grassland and high diversity of crops with low intensity of cultivation
Breeding habitat	Sufficient cover and good view Crops as: cereals, alfalfa, grassland and first year fallow land Second options: Corn, Sunflower or potato Nest used every year: 1 or 2 eggs
Autumn and winter habitat	Stubble fields, winter cover of oilseed rape or alfalfa, or in small groves in the area

Source: Nagy, Szabolcs, 2009

5.7.3. Concepts, challenges, steps and strategy

For guiding the development of the area four concepts are defined:

a. Sustainable food systems supporting local economies on both sides of the borders;
b. Multifunctional and sustainable foodscapes that transcend the borders;
c. Coordinated development and protection of biodiversity and habitats by developing sustainable foodscapes;
d. Cross-border landscapes and vibrant rural areas with shared interests and mutual benefits across cultures: rural communities, commuters, urban dwellers.

The main challenges are (1) the diversity of cultures and interests of people from three countries, (2) the need for overcoming the barriers in the landscape to improve the connectivity of habitats and enhancing the ecological network, and (3) to implement the European and national policies for agriculture in order to develop sustainable agriculture (Figure 20).

The first collection of impressions in the Mural resulted in the following issues and questions:

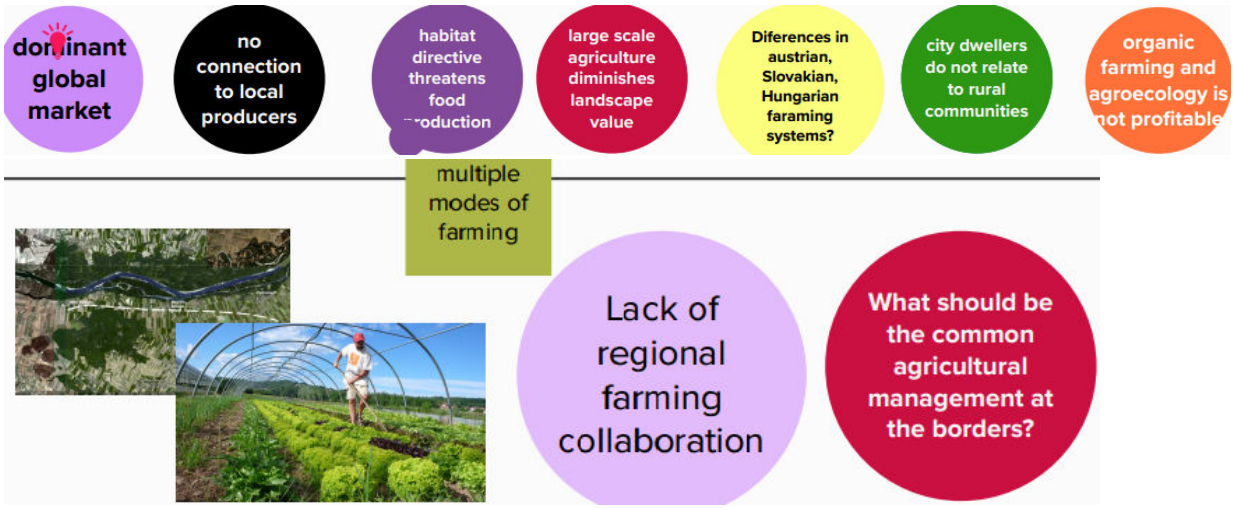

Figure 20. First impressions on farming and agriculture (source mural LLF Rural, 22nd of April 2020).

5.7.4. Steps

To address the complex set of challenges a series of steps can be taken. The importance is to involve the stakeholders in such a way that they can improve their situation step by step, seeing concrete results, and feeling empowered to act as change agents.

The process could start with:

- the cooperation of local actors (esp. farmers) to promote the importance of agriculture in the site;
- organizing support from professional institutions on food sustainability;
- creating an outlook and mindset towards a self-sustaining community by providing good examples;
- to communicate the benefits of the preservation of the foodscape and its ecosystem;

- to inform farmers on the benefits of crop diversification to farmers, show best practice in other regions, and overcome their reluctance from farmers to diversify crops;
- to organise activities to appreciate the foodscape as a shared cultural prominence: e.g. shared food festival, local (farm-to-table) market;
- to invest in the regeneration of wetland areas as part of the farming ecosystem/ bio-corridor and the great bustard habitat;
- introducing a shared specialty food institution to maintain the quality of the local foodscape and production, which helps the branding and marketing of local products;
- to clarify cultural differences between farmers and local actors(farmers, food, agricultural organisations) by organizing joint social activities (Figure 21);
- to support the local authorities to embrace sustainable development goals and put them into practice.

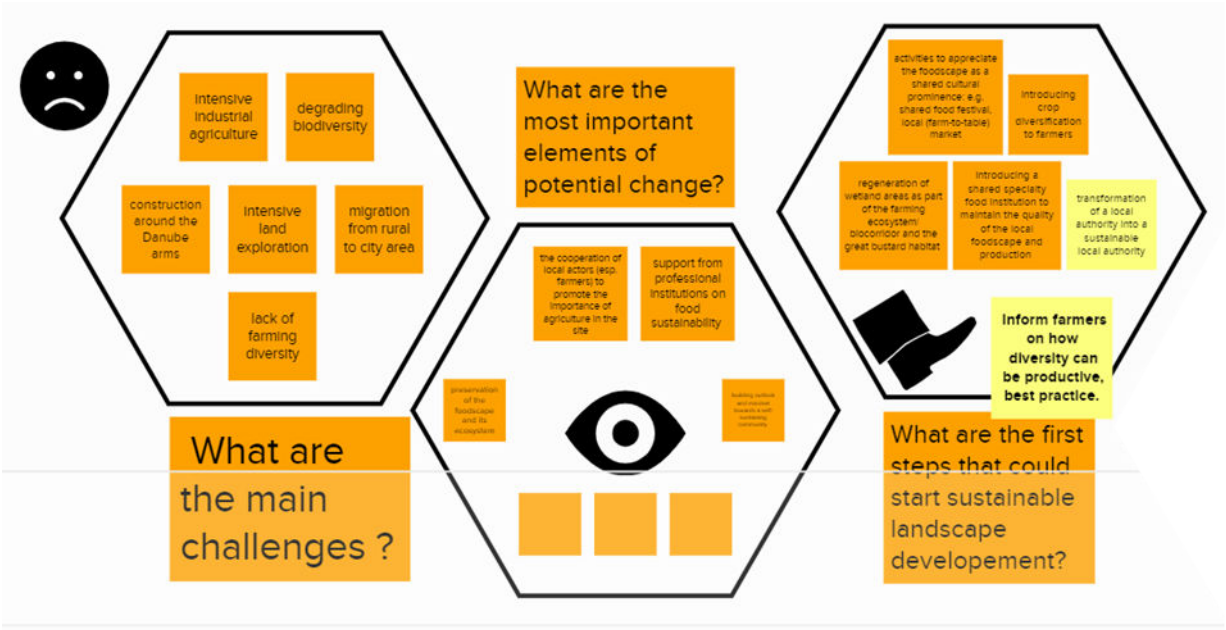

Figure 21. Interpretation of actions and steps (source: Mural LLF Rural, 22nd of April 2020).

5.7.5. From challenges to interventions and strategies

Food can be a powerful agent to strengthen communities. It can:

- Build the community by developing projects with the local stakeholders for self-sustaining communities;
- Focus on stimulating socio-economic growth of the rural economy by building on the gains achieved at macro level;
- Develop a long term cross-border spatial and social plan;
- Foster environmental regeneration through the development of innovative food systems.

Cross-regional initiatives can consist of:

- Creating shared food-markets, and organising cross-regional festivals;
- Increase the quality and quantity of local agricultural crops across the borders that represent local cultures;
- Creating a series of cross-border / cross-regional food hubs that connect the rurban area with cities and villages;
- Implement a special market strategy for cross-regional food products, that helps branding the products and strengthen the identity of Kittsee, Jarovce and Rajka (Figure 22).

Figure 22. Challenges, interventions and strategies in the participatory discussion (source: Mural LLF Rural, 22nd of April 2020).

5.7.6. Vision, strategy and concept

The vision is to establish a sustainable foodscape in the region that support farmers and producers and enhances the connection of residents with their landscape: their gardens, green amenities, recreational areas and productive farmland. Because the role of the EU CAP is essential in maintaining a coherent policy on sustainable agriculture across urban - rural even more important for cross-border rurban areas (Figure 23).

Figure 23. The contribution of the CAP to the United Nations Sustainable Development Goals (SDGs).

Reconstructed as an official "target" of the European Cohesion Policy in 2000 and known as the Interreg program European Cross-border cooperation aims to tackle common challenges identified jointly in the border regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purpose of the overall harmonious development of the Union (EC 2020) .Under the 2014-2020 program Interreg VA - Austria-Hungary; Interreg VA - Slovakia-Austria; Interreg VA - Slovakia-Hungary Projects Supported (European Commission, 2020).

With regards to sustainable food production, and in the context of the current crises, more ambitious targets are needed to promote ecological practices that increase biodiversity and soil fertility, reduce erosion and contamination of soils, water and air, support adaptation to climate change and decrease energy consumption (F2F Strategy Commentary, 2020). Taking the fact into account that limited accessible and affordable land for farming rise the importance of foodscape in peri-urban areas.

Need for shorter food chains and the promotion of circular economies embarks the strategies and policies that enable farmers to operate as stewards of ecological resources in urban and peri-urban contexts.

Diversification of farms and farming landscapes has been identified as key to driving down the use of synthetic inputs and reviving natural synergies and ecosystem services. Furthermore, agroecology is rooted in participatory, action-oriented research and experimentation (IPES-CFP, 2020).

One primary means to relocate the food system infrastructure is through the development of food hubs. Food hubs - especially those located in peri-urban or urban areas - can also improve access to healthy food for low income groups and contribute to social integration by acting as community food centres (IPES-CFP, 2020).

Food planners have a strategic role to play in preserving agricultural land in and around cities, and expanding and securing areas that will provide multiple spaces for an effective food supply chain and hybrid food systems to blossom. In doing so, they can help to increase food security for all and open the way to urban food sovereignty (Cabannes and Marocchino, 2018).

The strategy is based on the objectives of the Common Food Policy: (1) Ensuring access to land, water and healthy soils; (2) Rebuilding climate-resilient, healthy agro-ecosystems; (3) Promoting sufficient, healthy and sustainable diets for all; (4) Building fairer, shorter and cleaner supply chains; and (5) Putting trade in the service of sustainable development.

The region already has a strong focus on organic agriculture in combination with nature protection and local branding (the Kittsee apricots). And still the foodscape could be further developed by working on six specific goals with a set of actions (Table 2).

Table 2. Strategies for Cross-border landscapes (Kittsee, Jarovce and Rajka)

No.	Goals	Actions
1.	Strengthen the governance of food systems	Installing a cross-border food council with representative from producers, industry, consumers for Kittsee, Jarovce and Rajka. The food council can work on a common food strategy for the area and support local authorities in their policies.
		To initiate a cross border farmer network for Austria, Slovakia and Rajka, to cooperate for agricultural biodiversity and protection of Otis tarda and better pricing and branding of produce.
2.	Fostering agroecology and organic agriculture	Local communities rent out their land under the condition of organic of agroecological farming.
3.	Promoting healthy diets	School canteens, local authorities and industry buy or procure food from local and sustainable producers with a preference for fruits, vegetables and local and seasonable products.
4.	Provide farmers with fairer income	Develop brands for local produce of rapeseed oil and wheat that show their impact on biodiversity and cultural identity (for instance the great bustard bread).
		Organise food hubs with local products in supermarkets, in the Inter-City-Park and the rest places along the motorway.
		Support farmers with practice-oriented research on agro-ecology in collaboration with universities in Vienna, Bratislava and Budapest.
		Promote local products in regular community events of each city, with reference to the Kittsee *sommer festival*. The three cities can also have joint food events in different times of the year.
5.	Better connect urban consumers, newcomers and commuters with their environment.	Set up Community Supported Agriculture where local residents can harvest vegetables or have subscriptions on local products.
		Add pick your own berry and fruit farms to the existing orchards. And develop orchard further also near Rajka.
		Create in every village a community garden where all ages can collaborate and exchange their experience on growing.
		Integrate community gardens, larger kitchen gardens and edible green amenities in the new urban developments.
		Integrate food forests and edible green (fruits, nuts) in the new park development near Kittsee, Jarovce, and Rajka that forms a link in the green infrastructure.
6.	Provide the conditions for a more sustainable income for fruit growers	Diversify the orchards and add other brands to the Kittsee Marille; e.g. for berries and other fruits that blossom in other periods.
		To set up Cross-border brands and a cross-border agro-tourism initiative to help biodiversity protection and cross-regional development.
7.	Overcoming the fragmentation for enhancing biodiversity.	Recover the fragmented parts, some links for food, some for biodiversity, (two parts: one open and one more with hedgerows and landscape elements. Construct additional eco-ducts for the bio/corridor.

The proposed interventions of the strategy are highlighted in the map below. This map is based on the BAUM urban development plan and further elaborated for the aspect of sustainable foodscape (Figure 24).

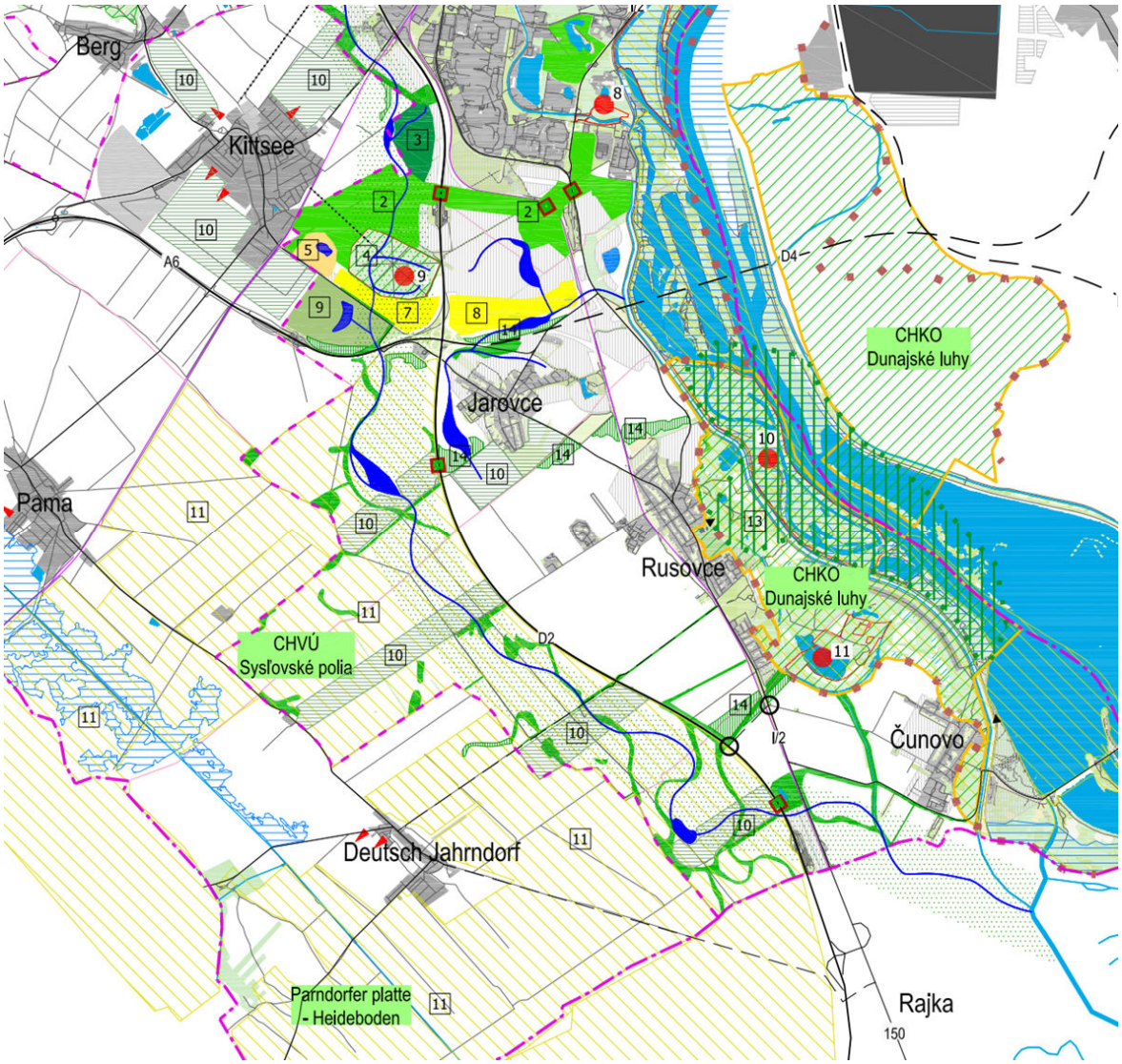

Figure 24. Map with the main interventions to develop a sustainable foodscape in the area

PARTICIPATORY GUARANTEE SCHEMES (PGS). Membership of farmer-run PGS schemes offers an alternative to formal certification and is well-adapted to the diverse and locally-specific nature of agroecology, as well as to the need to empower farmers and reduce reliance on costly administrative procedures and brokers of market access. PGS schemes are exploring ways of guaranteeing agroecological methods, including with use of new technologies.

COMMUNITY SUPPORTED AGRICULTURE (CSA). CSA schemes involve a commitment to diversified, seasonal, and generally organic production that is overseen by the consumer participants themselves. They also put price-setting in the hands of the farmer. These schemes, which are federated and self-regulated within regional and national networks of CSAs, offer a useful proxy for agroecology in terms of their aspiration to the triple bottom line of sustainability. The first comprehensive report on CSA initiatives in Europe points out that "the Nyéléni definition of agroecology fits CSA".

'ORGANIC 3.0'. While organic certification does not guarantee ambitious redesign and diversification of farming systems, and does not always guarantee fulfilment of the organic principles,3 it provides a baseline guarantee of more sustainable practices, particularly when practiced across the whole farm. Using organic as a proxy for agroecology will be increasingly viable as organic certification procedures evolve: the 'Organic 3.0' vision envisages convergence between organic and agroecology, the inclusion of social equity alongside environmental concerns, and a greater role for informal, participatory governance of organic.

Source: Common Food Policy, 2019.

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Chapter 6.

6. Rural Change and Foodscapes of Rimini

The 11th LE:NOTRE Landscape Forum Emilia Romagna / Rimini
April 26 – 30, 2022 Rimini, Italy

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Rimini, 2022

6.1. Outline of the theme

One of the most productive landscapes of Italy is the territory represented by Emilia-Romagna. In this region the Via Emilia forms an important infrastructure. Since Roman times the area was developed as a productive area.

This coastal area with its hinterland can be seen as a spatial system that connects cultural landscapes and food systems. However, the current production system produces mainly for the national and global market and has hardly any connection with the region and local communities. The future Common Agriculture Policy (CAP) aims among other things to ensure a fair income to farmers, to rebalance the power in the food chain, to act upon climate change action, to preserve landscapes and biodiversity, and to support vibrant rural areas. Multifunctional local and regional foodscapes can contribute to the integration of traditional and recreational agricultural areas. Agriculture may have an important contribution for accessibility and security of food. It can also favour the local economy and strengthen the identity of the tourism complex. For local inhabitants it can foster social cohesion.

Foodscapes are understood as all those areas that contribute to food production such as arable land and farms, orchards, allotments, and vegetable gardens in combination with the social capital they build. Food and its production may help us connect and find shared interests across cultures. Food production could be re-envisioned as a partnership between consumer associations, foundations guiding the overall goals and corporate partnership of farmers. This would provide opportunities for jobs for disadvantaged groups like migrants and refugees. The connection between people and food should be strengthened to attract children to spend time outdoors, rather than in front of a computer screen. The landscape should give people the opportunity to grow their own food for their physical and mental well-being. Multifunctional, inclusive, and organic farms can help to protect and develop green corridors consisting of nature reserves, nature development zones and landscape development areas. Therefore foodscapes should be well connected to the networks of recreation and nature protection to trigger mutual benefits.

Source: *Brief for the foodscapes theme of the LE:NOTRE Landscape Forum 2020*

Emilia-Romagna defined "marginal agriculture areas" that coincided with the agricultural areas adjacent to urban centres. Here, new agricultural constructions could be built; however, their realisation should be contained to prevent contrasts with the prevailing residential function of the consolidated urban fabric and close to peri-urban agricultural areas (Valentina, 2020).

In the region there is an increase of organic farming and integrated production aimed to have a low environmental impact: reducing the use of water and energy, while promoting circular economy.

This is fully inline with the policies of the Regione Emilia-Romagna aim for an increase of organic and integrated production and strengthening the regional food systems. But it is important to understand the relationship between past and present how landscape has been evolved across time and what are the actors in the food system. From mainland Emilia-Romagna

to the Cesenatico how food system flow works from coast to inland, who are the stakeholders, how the productivity in the region can be safeguarded will be evaluated in the foodscape framework.

6.2. Study and planning area

The foodscape study focuses on the transect of Cesenatico and its connections from coastline to the inland production areas. It consists of the complex agglomeration of the Adriatic Sea coast, inland colonia, coastal plain, farming lands and the foot of hilly areas. The landscape relations were studied by exploring transects that run from the coast to the inland area and also from north to south in order to analyse variation in landscape use and agricultural systems (Figure 1).

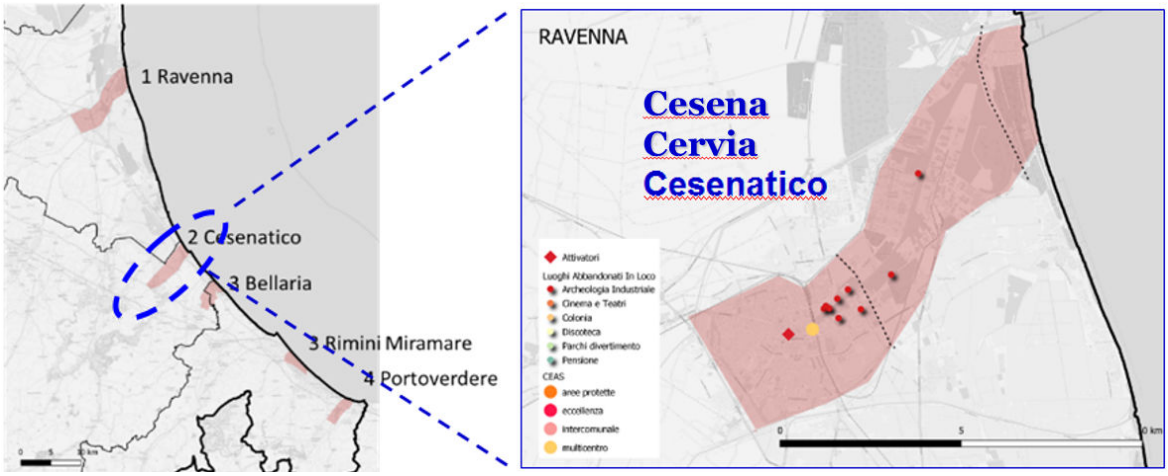


Figure 1. Location of the study area

The study and field visits included one transect from inland Cesena to coastal Cervia and Cesenatico (Figure 2) with a focus on the concept of farming and the related food system. The team met with the association of the fishermen, agricultural producers around Cesenatico, an organisation that relate to community supported agriculture and some social NGOs that support the less economically strong part of the population.

Figure 2. Focus Area: Cesena to Cesenatico (Transect made by architecture students at the University of Bologna: C. Corradinin Zini, M. Lampati, G. Martini, N.Petracci, G. Quaranta, L. Taddia; Corso di Tecnica Urbanistica 2020/2021 Prof. S. Tondelli)

The study was based on an overview of Emilia-Romagna on regional and Rimini on more local level. After the field visit analyses were made on spatial changes in the region landscape, using the DPSİR-method (Table 1) and SWOT analysis (Table 2). Main challenges for foodscapes were evaluated in the light of dynamics, impacts and potential food system interactions between producers, retailer, consumer as well as different sectors (Figure 3).

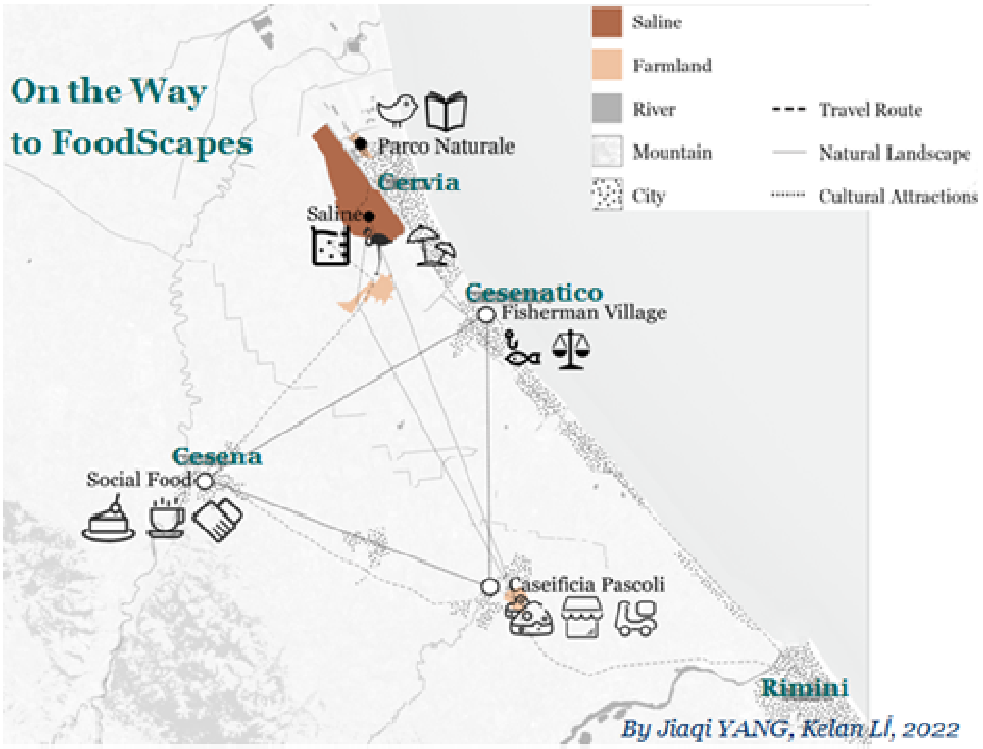


Figure 3. Local food initiatives on the way to foodscapes

6.3. Characteristic from regional to local

Natural characteristics of the Emilia-Romagna landscapes diversify from sea and coastline to inland flatlands, hilly interior countryside to mountainous farmlands and forest. Crapolicchio (2020) articulated that having a strategic geographical position, Rimini is located at the point where the Apennine system meets the Adriatic Sea, this position determines a hinging point which represented, on the one hand, the end of the Apennine mountain ranges and on the other the passage of the coastal road leading to the Po valley.

The town of Rimini lies on the top of fluvial, transitional, and marine deposits, in the floodplain area, the main morphogenetic agents are the outflows from the rivers Uso, Marecchia and Ausa starting from the north (Guerra, Guerra and Nesci, 2020).

Alluvial plain of the Apennines Rivers

This includes the inter-valley sectors of the Apennines, valley mouths along the Apennine margin and the large plain stretching all the way to the river Po and the coast. The landscape owes its primary characteristics to the dynamics of the Apennine Rivers which, after an inter-valley course during which they form small ribbon-like deposits, they flow into the plain (upper

plain), depositing their coarse load of gravel and sand and forming sedimentary bodies: the alluvial fans, characterised by a system of fluvial channels.

Po River and the Plain

Regular water discharge is currently guaranteed by land reclamation works. The Po plain has been a fully anthropized territory for over 3000 years. Many of the distributaries have shaped the landscape through a combination of artificial embanking and rectification of rivers, reclamation of valleys and intensive urbanisation. Today the plain is fully farmed and presents a level of industrialization (Ambiente Regione Emilia-Romagna, 2015).

The Po Plain is occupied by the corridor of the great Po River, by the mouths of its various branches and ancient deposits. The river corridor marks the northern boundary of Emilia-Romagna and defines a twisting fluvial meander of Po plain. Ancient branches of the Po di Primaro, Po di Volano and other minor branches and the delta valleys as the traces of past marshland or lagoons characterise the lower plain (Ambiente Regione Emilia-Romagna, 2015).

Coastal plain

This strip of land lies parallel to the coast, running alongside the sea. Low-lying elevations of coastal plain between 2-1 metres are characterised by an ancient system of north-south facing elongated dunes, clear evidence of ancient shorelines with bodies of palustrine water and river levees. The beaches widen out back to the coastal dunes, formed by the onshore wind sweeping the grains of sand. Inland, traces of fossil dunes are virtually on the edge of extinction. The Massenzatica dunes, in the regional nature reserve protected area, mark the Copper Age shoreline with regard to natural history (Figure 4).

The large wetlands near the coast present important ancient delta lagoons and marshes, like the Comacchio Valleys and the Bertuzzi Valley, or landforms which indicate moments of rapid accretion of the shoreline towards the sea. Over the last fifty years the area has been highly urbanised, beachfront bathing establishments, ports, wharfs, and coastal defence works (breakwaters, piers) have been built, altering the natural characteristics of the beach (Ambiente Regione Emilia-Romagna, 2015).

a **b** **c**

Figure 4. Alluvial plain of the Apennines rivers (a), Po River (b) and coastal plain (c) (Ambiente Regione Emilia-Romagna, 2015).

Romagna is an historical-geographic region of about 6,000 square kilometres under the administration of the Emilia-Romagna region. It includes the administrative provinces of Ravenna,

Forlì and Rimini. Geographically, the Romagna area is delimited by the Sillaro and Reno river valleys to the North-West and North, by the Adriatic Sea to the East, by the Conca valley to the South and by the Apennines to the West and South-West (Gatti, Incerti and Ravagli, 2002).

History Development of Land – Agri – Culture / Foodscapes

Resting on Marecchia and Ausa alluvial sediments Rimini's geography and geomorphology mainly depend on fluvial dynamics and, secondly, on marine processes (Guerra, Guerra and Nesci, 2020). Speaking about the Po Valley is relevant and paradigmatic in the discourse of rural heritage-led development (Montanari and Marasmi, 2012). The Valconca territory is a fertile valley behind the city of Rimini. This landscape has been occupied since prehistory (Cirelli, 2011).

The first traces of human presence in the area can be set at 800,000 years BP, with Palaeolithic tools and testimonies found in the Covignano hills 2 km inland. The Villanovian people - early stages of the Etruscan culture – thrived in what is now Verucchio (Guerra, Guerra and Nesci, 2020). Rimini became a Roman colony in 268 BC. This resulted in a major demographic increase, with the town and its surrounding countryside undergoing a huge reorganisation. Via Flaminia (220 BC), Via Aemilia (187 BC) and Via Popilia (132 BC) were built, the territories from the Cesena plains to the River Conca valley (south of Rimini) were reclaimed from the swamps, and the Roman centuriation grid covered these lands almost entirely (Guerra, Guerra and Nesci, 2020).
The two parts distinguish the coastal city from the historical Roman one. For these characteristics, it seems to be an introductory case study to perform a morphological-type reading through time (Crapolicchio, 2020).

A different way of rural organisation connected the many small farms that continued to occupy this valley during the early Middle Age, when much more of the settlements of this territory gave tributes to the Archbishop of Ravenna (Cirelli, 2011). Following the death of Frederick II, Rimini manages to maintain control over the countryside also thanks to the presence of feudal lords. Among these lords there were the Malatesta family, who consolidated power over the countryside and increased their real estate possessions within the walls. Between 1288 and 1295 was the Malatesta hegemony and by the mid-thirteenth century, the Malatesta's became vicars of Rimini carrying out a policy of capillary control of local power, providing for the urbanisation of rural areas entrusting them to feudal families loyal to them and carrying out a strategy of dynastic alliances with illustrious families of other cities (Crapolicchio, 2020).

After the Second World War, Rimini suffered severe consequences of damage. The reconstruction, hastily ignored Rimini's history, accelerated the construction of the new image of mass tourism. More than a century of expansion towards the coast ends up with specific projects for the tourism sector, and the port on the Marecchia River (Crapolicchio, 2020).

Historically, main roads guarantee the marketing of the products towards urban centres therefore rural\urban communications followed in many cases prehistoric paths. The most important street that crossed this territory was a ramification of the Flaminia coming from the south through Acqualagna, Urbino, Tavoleto, Monteiore in Conca, Coriano, connecting the Piana di San Pietro with Rimini (Enrico Cirelli, 2011).

The coastline by the Adriatic is considered a Quaternary coastal area due to sedimentation processes, while rias, cliffs or rocky coastal landforms connected to Holocene marine transgression are absent. Thanks to this geomorphology and to the large availability of land and beaches, sun & sea tourism grew (Piastra, 2011).

Territorial Dynamics and Landscape Change

Rimini, from the Latin Ariminum, was chosen as a settlement area because of environmental factors such as access to the Adriatic Sea and an abundance of water springs. Climate variations in historical times have played a significant role in shaping the town's environment: the Marecchia River has been known for its torrential temper since ancient times causing floods, cut-offs, and hydraulic instability (Guerra, Guerra and Nesci, 2020).

The manifold small and medium-size cities that insist in both regions have also been affected by urbanisation, which have impacted the conversion of rural areas in peri-urban fringes and generated a peri-urban multi-polarized continuum in Emilia-Romagna. Here, urban extension has converted large rural areas around the urban fringes into peri-urban ones (Valentina, 2020). Today Rimini represents the densest city on the northern border of the coastal strip.

The wine grape growing sector of the Emilia-Romagna region is one of the most relevant at national level, as it produces 12 % of the total Italian production. In relative terms, 15 % of the Italian wine growing farms and 30 % of the land allotted to grape growing are located in the Emilia-Romagna, which is characterised by a high record of 63 % of grape growing in the plain (Gatti, Incerti and Ravagli, 2002).

In Italy and Southern Europe in general, the "valorisation" of rural areas through a tourism activity strictly linked to wine culture and especially its promotion by opening cellars and vineyards to visitors, is more recent (Gatti, Incerti and Ravagli, 2002).

Recently the population moved towards the urban centres firstly and then beyond urban boundaries and closed rural centres at an impressive rate. Almost half of the municipalities that grew more than 160% are in these regions. Part of the population shifts going to smaller municipalities, or to the countryside which appears more urbanised. These displacements are ordered, and the population does not result sparsely distributed in all considered municipalities. This in turn implies high values of soil consumption, which grows more than the population in most of the considered municipalities (Valentina, 2020).

Tourism is the main driving force in regional landscapes. The Rimini-Bellaria coast is one of the main tourist resorts of the Northern Adriatic Coastline. Large marinas and minor harbours are present along the coast, while one large industrial port is located in Ravenna, serving the oil and chemical industry (Ciavola, Corbau, Cibin and Perini,). The province of Rimini boasts some 15 million hotel presences a year (7% of the national total), and is considered to be the seaside holiday capital of Italy, as well as being home to numerous manufacturing industries (Battilani and Fauri, 2009). Moreover, this sector was dominated by sharecropping and smallholdings, and as such had shown little propensity towards change (crop rotation with forage was still unheard of,

and cash crops were still a rare occurrence), and had failed to stimulate the creation of any food-processing companies (Battilani and Fauri, 2009).

The Adriatic coast including five Italian regions of Veneto, Emilia-Romagna, Marche, Abruzzo and Molise looks like a world in which buildings, interchanges, single-family houses, vegetable gardens, avenues to the sea, bathing establishments, discos, hotels, shop windows appear in abundant quantities. These coastal agglomerations are set around the survival systems: energy, economy, mobility (Crapolicchio, 2020).

Examples of orthophotography mosaic (1943-1982-2005) of Rimini city in different time periods display the great transformation particularly in the coastal plain (Figure 5). The Emilia-Romagna region as part of the project Nature Network 2000 is viewable at http://www.regione.emiliaromagna.it/natura2000).

Figure 5. Rimini city in 1943, 1982 and 2005 (Regione Emilia-Romagna, 2008).

Industry in the Rimini area subsequently consolidated its position independently of local tourist demand, and proved capable of developing into a valid labour market during the crisis years of the seaside holiday model. In conclusion, in the Fifties and Sixties the tourist district widened its base through a demand induced growth of local industrial producers and in the eighties a new autonomous industrial district was finally able to grow on its own. This is how tourism has fostered local industrial development in the case of Rimini (Battilani and Fauri, 2009).

The stability of the Romagna coastal profile is especially sensitive to natural land subsidence and anthropogenic land subsidence caused by both groundwater pumping and gas withdrawal and to the expected mean sea level (msl) rise due to global climate change (Gambolati, Teatini and Tomasi, 1999). In the last 150 years man has altered the regime of the watercourses. A significant intervention must be identified in hydraulic land-reclamation: wetlands and lowlands, located in depressions (Piastra, 2011). However, the oldest useful representation on coastal change is Flaminia (Latin name, as well as Romània, of Romagna), drafted by Egnazio Danti (1536–1586), professor at the University of Bologna between 1580 and 1582 under Pope Gregorius XIII. A sector of Flaminia represents the coastline north of Ravenna. From the Adriatic Sea towards the inland, three »belts« are visible: sandy beaches, pine-woods and wetlands.

Sandy beaches are related to river sedimentation while pine-woods here date to the Mediaeval Age: it is an artificial forest mainly composed of stone pines (*Pinus pinea*) which monks from Ravenna seeded in order to fix old dunes and to provide timber for building and heating as well as resins for pharmacopoeia (Fabbri, Missiroli, 1998 in Piastra, 2011).

In Danti's Flaminia, pine-woods are depicted in their original surface, without any interruption between the mouth of the Po di Primaro river to the north (a senescent arm of Po

river, currently renamed Reno River) and Cervia to the south. Wetlands, in this region known as »valli«, (sing. »valle«, from the Latin word »vallum«: wall, in this case a dune-bar) are located in depressions below the sea level, due to subsidence phenomenon (Piastra, 2011).

Another sector of Flaminia, south of Ravenna, shows two salt-pans: Cervia and Cesenatico. Marine salt production (in the Late Medieval-Early Modern Age sources called »White Gold« held an important role in the regional economy because as opposed to Austria or Germany, northern Italy is bereft of fossil salt deposits (Halite).

The Cervia salt-pan dates back to the Early-Mediaeval Age and it has been preserved up till now; even the toponym »Cervia« is linked to salt production, deriving from Latin word »Acervus«, that is »heap«, in this case made of salt. The Cesenatico salt-pan was smaller and was closed during the 18th century (Tassinari, 1969 in Piastra, 2011).

Both of the salt-pans were settled here because along the Romagna Coastal Zone marine water salinity is high, as the inflow of fresh waters from the Apennines rivers is negligible between Cervia and Cesenatico, the salt-pans are also represented.

During the 18th century, a decrease of the riverine solid transport to the sea; in the inland regular division of land is connected with hydraulic land-reclamations; north and south the river arm are visible some fresh and brackish water wetlands; next to the shoreline, coastal woods and several dune-bars are represented. Human settlements are very rare; just some fortifications facing the sea are depicted (Piastra, 2011).

Moreover, the Carta Topografica dello Stato Pontificio e del Granducato di Toscana was a kind of testimony that the total disappearance of Cesenatico salt-pan occurred in 1851, converted to new agrarian fields.

Groundwater and gas have been progressively withdrawn from the subsurface starting from the early 1950s. Land settlement caused by groundwater pumping has exceeded 1 m in some coastal areas (e.g., the industrial zone of Ravenna and the city of Cesenatico) (Gambolati, Teatini and Tomasi, 1999).

The reduction in surface of pine-woods and wetlands is another long-term trend rising from the maps to be linked to the overexploitation of forests, to population growth and to the necessity to create new lands for agriculture (Piastra, 2011).

6.4. Analysis of spatial changes in the regional landscape

The foodscapes of Rimini have range from the Adriatic Sea, extending to coastal and inland plains and mountains. Cesenatico at the north end of Rimini is a small fishing town which almost has been transforming into coastal tourist attraction. However, traditional fishing and fish market retains its former possession in the local and regional economy (Figure 5).

Cervia, at the crossroad between coastal settlements is ecologically valuable habitat with Parco Naturale. The Natural Park inside the Pinewood of Cervia (Ravenna, Italy) is an area with a high conservation value, being now part of the protected areas of the Regional Park of the Po Delta in the Emilia Romagna Region (https://www.p-arc.it/Cervia-Natural-Park).

Salina di Cervia named as Cervia Salt Pan has been become a natural sanctuary by the ecological prosses aftermath of salt mining activity. Now under protection, Salina di Cervia greatly attributes landscape value that the salt pan and its function as an ecosystem.

Savignano on the proximity of Rimini represent a verge from coast and coastal habitats to farming and production landscapes. Small scale industries, construction and agriculture are the main economic components.

A vertical transect in Figure 5 shows spatial transition from Cesenatico to Savignano on the way to Rimini with prominent land use patterns, natural and cultural landscape characteristics.

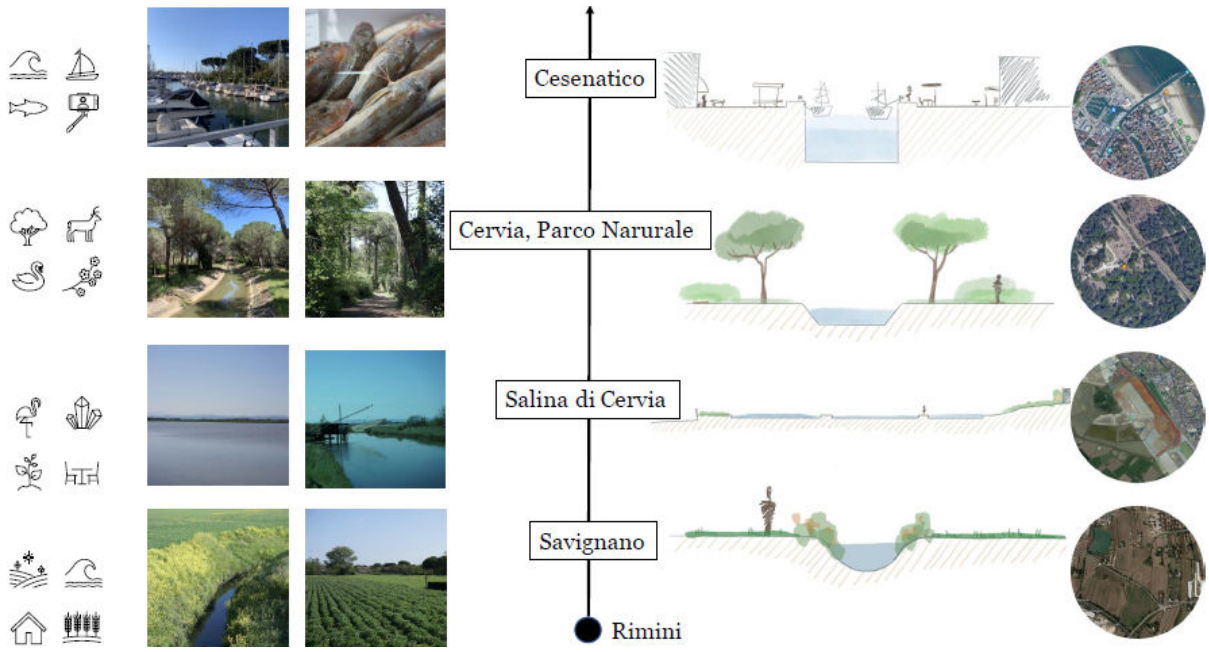


Figure 5. Spatial changes in the regional landscape (Arina PAUTOVA, 2022)

A cross-cut DPSİR Analysis is summed up in Table 1. Land fragmentation, higher land prices particularly on coastal plain, abandonment of mountain settlement and farming are some of the driving forces that lie behind the change in agriculture and foodscapes. Overall, climate change and global economic are the major pressure for growing demands on natural capital and degradation of land, water and ecosystem services.

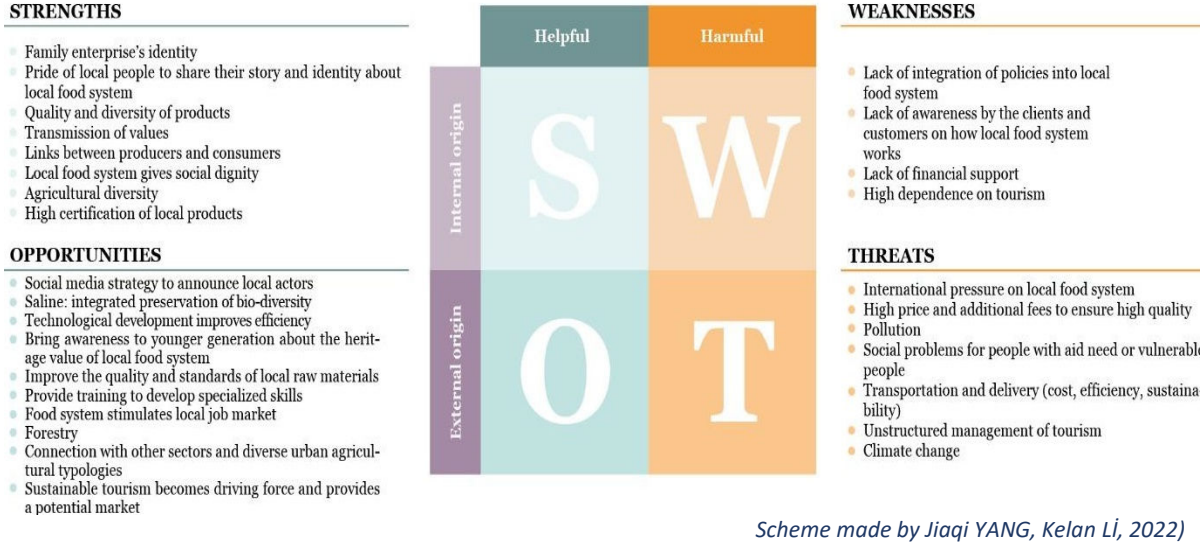
Regarding to all the sectors have either negatively or positively affecting foodscapes a cross-cut DPSİR Analysis is summed up in Table 1. Land fragmentation, higher land prices particularly on coastal plain, abandonment of mountain settlement and farming are some of the deriving forces that lie behind the change in agriculture and foodscapes. Overall, climate change and global economic are the major pressures for growing demands on natural capital and degradation of land, water and ecosystem services.

Table 1. DPSİR Landscape Analysis – Rimini (Emilia-Romagna)

Driving Forces	Trends	Pressures	State	Impacts
***Urbanization**	*Unstructured urban growth along an urban-rural continuum (e.g. highway: fragmentation agricultural land)	*Growing demand and degradation of natural resources (land, water, ecosystem services)	*·Land fragmentation Higher land costs (plain) and abandonment (Mountains / Hills)Limited participation on decision making *Lack of common good	Loss of local food identity and know-how Public health Creation of social disparities and vulnerabilities Degradation of ecosystem services
***Tourism**	*Growing dependency on tourism	*Commoditization (Economic, cultural, social) Transition from agriculture to tourism	*Seasonality (employment, use of resources) *High Concentration of people flows and consumption *Generational and migration transition * Lack of food system strategy (biodiversity, agricultural, nutrition, etc.)	
***Climate Change**	*Water scarcity	*Climate Risks	*Water shortage	
***Global/Regional Economic Development**	*Economies of scale Pollution from inland to coast and sea	·Concentration of power Water and soil pollution	*Food identity oriented to export/globalization *Fragile ecosystems	
***Regional Crisis**	*Social, economic, energetic uncertainty	*High input costs	*Lower income of farmers	
S P E C T R U M O F R E S P O N S E S				
- Resilience **- Reterritorialization** **- Democracy** **- Participation** **- Inclusion**	→ Multilevel cooperation – Horizontal-Vertical – Intersectoral – transdisciplinary *Green Deal *CAP, COP *PNRR *MUFPP *One-Health	→ Building awareness & evidence-based decision making → *Landscape Observatories *Living Labs *Participatory Action Research *Grounded Research	* Integrated and Inclusive Food System Strategies * Integrating Food in the (urban) political agenda *Circular economy policy of Emilia-Romagna *Integrated Landscape structure of the region	CILS Social Food Popular kitchens Food hubs (e.g. in Colonia)

Scheme made by Sebastian BURGOS GUERRERO , 2022

Table 2. Rural Change and Foodscape SWOT Analysis



Scheme made by Jiaqi YANG, Kelan Lİ, 2022)

On the other hand, family run food enterprises, local food initiatives, certified in local products, a close link between producers and consumers and good quality and diversity in local brands are strengths for sustainable management of foodscapes in Rimini.

Cesenatico from Fishing to Tourism Town

Cesenatico is a renowned seaside town on the coast of Romagna, located between Ravenna and Rimini. In the picturesque historical centre, which resides harmoniously among modern urban structures, people can still get a sense of the atmosphere of the old fishermen's village. The soft sandy beach which stretches out towards the sea, with its well-equipped beach centres, and the hinterland, with two big parks, are only a few of the distinctive features of Cesenatico. Its "Giardini al Mare" is a lively place, a long green area where people can sunbathe while walking peacefully.

Cesenatico's gastronomy, based on fresh fish, offers the best of the traditional fish dishes in the characteristic restaurants located along the Canal Harbour, to be tasted with the typical piadina bread. However, seems to be on the transition from a small fishing town to one of the popular tourism spot in Emilia-Romagna (Figure 26).

Figure 26. Cesenatico: from Fishing Town to Tourism Town

6.5. Policy framework related to food systems

Handling Foodscape in Spatial Planning

All these territorial transformations are governed through the adoption of regional laws and plans. These acts promote spatial urban-rural equilibrium and include specific measures for the agro-environmental balance and urban regeneration in the urban fringes. Unlike other regions, Emilia-Romagna have experimented with more accurate spatial delimitations of their regional territory (Valentina, 2020).

Recently, Emilia-Romagna has approved a new regional planning law, the Law no.24/2017, which repealed entirely the previous one, the Law no.20/2000. The new law is inspired by the same principles which are the basis of the previous one and specifically on subsidiarity and cooperation. As such, it delegates large competences to the municipalities and creates some collegial organisms, such as Comitati urbanistici (Town planning committee) with the specific tasks to coordinate and integrate advice from various public institutions (Region, provinces, metropolitan cities) on the subject of participation, environment and any other matter required by law. However, it is important to seek for an integration and adaptation of the sectoral and provincial plans along with the Piano di sviluppo rurale (Rural Development Programme, RDP) (Valentina, 2020).

Peri-urban governance in Emilia-Romagna

For years Emilia-Romagna has been working on defining peri-urban areas and governing them through urban-rural development plans. By approving the Law no.20/2000, this region was one of the first ones to define peri-urban areas and more specifically the "peri-urban agricultural areas". These areas were defined as territories adjacent to urban centres or enclosed between urbanised and contiguous settlements (Valentina, 2020).

The region could promote the realisation of agritourism and organic farming techniques, and barriers to protect not-infrastructure areas. As such, farms could maintain their agricultural vocation and promote activities to supplement agricultural income (Valentina, 2020).

Most of the farms are directly managed by the owner-farmer (95%), even if the importance of direct farm management using exclusive family labour decreases, as farm size increases. Over 90% of the farms are smaller than 0.2 hectares while just 12% of the farms are lager than 10 hectares (Gatti, Incerti and Ravagli, 2002).

Foodscapes and Sustainable Regional Development

The realisation of integrated projects between viticulture and tourism sectors (such as the wine routes) in vineyard areas like Emilia-Romagna can offer an interesting solution for those winemakers who intend to launch the promotion of their own products and create development opportunities as, for instance, new job opportunities for young people. In the tourism sector, it might be possible to integrate traditional activities – such as beach, thermal and mountain tourism – with the yet non-existent thematic tourism in the Emilia-Romagna region (Gatti, Incerti and Ravagli, 2002). Important challenges for a sustainable food system are:

- organising short chain collaborations between local producers, retailers, restaurants, cafes, hotels and tourism operators, and providing a space for this in the form of food hubs (e.g. in one or some of the colonia).
- adapting the produce and crops in the coastal area to climate change and local production to make the production less global oriented and answering to the demands of food in the region.
- access to good quality and local food for the less advantaged calls for strengthening the networks of local producers with consumers and developing possibilities for growing food in and around the city.
- bridging the gap between consumers, producers and governance by organising participants in collaborative platforms such as Food Councils with representatives of local farmer organisations, NGO's, and retailers.
- strengthen branding of local products to help local producers have a strong place in the market linking that to cultural heritage, traditional crafts and produce, and fostering traditional landscape patterns.
- supporting social entrepreneurship in the food branch to make the industry more inclusive by providing work and activities for the less advantaged.

providing a spatial network that is linked to local production with gastronomic thematic routes making use of networks of green infrastructure.

6.6. Landscape Vision and Strategy for Foodscapes and Food Systems

Stakeholder Engagement

Actors in the food system are multidimensional and multi-sectoral. The system includes producers (farmers, market gardeners, fishermen, aqua-farmers), processors (mills, cheese makers, food & drinks processors and packagers), distributors (wholesale, retail, markets) that deliver products and services to consumers. These are influenced and supported by policies, processes and projects (Figure 27).

Food system actors represent the largest group of natural resource managers. They are critical in both creating the problems and implementing the solutions. Identifying actors along the food chain as well as where and how power is located enables policy makers to develop management approaches targeted towards those actors with influence. In addition to those directly involved in food chain activities, governments and civil society are also important as they set the wider policy and societal context. Installing a platform like a food council can help to make the system more equitable and just.

Figure 7. Potential policies, projects and processes that support food systems and food governance in the Region

The Crop Production Research Centre (PRPV www.crpv.it) is a cooperative company located in Cesena (Po Valley, Northern Italy), operating in the development of research on crop production, through four main topics: (1) fruit, vegetables, seeds, floriculture; (2) viticulture, oenology and olive oil; (3) cereals, beets and oilseed crops; and (4) bio-energy. It could act as a platform for the exchange of knowledge among actors and organisations of the local food system, enhancing their collaboration and building strategic capacities in the system.

Local Branding

Local branding and strengthening sustainable food systems through local products and geographical indications are considered as key tools for a sustainable rural development. Origin-linked products can be part of a virtuous circle of sustainable quality based on the preservation of local resources and other factors described in the FAO-SINERGI guide “Linking people, places and products” (Vandecandelaere et al, 2010).

Dairy producers of Squacquerone di Romagna (Protected Denomination of Origin) are one

of the key local food associations in the region (Figure 28 and 29). During our research, we found the cheesemaker, Caseificio Pascoli, a family run-business and producer of two traditional local cheeses, Fossa (PDO) and Squacquerone di Romagna (PDO) that is using raw material from the local farmers and milk producers.

Figure 8. Visiting Squacquerone di Romagna

Local Food Initiatives

Figure 9. Social Food Initiative 'Well Done'

Milan Urban Food Policy Pact (MUPP)

By signing the MUPP, cities commit to "work to develop sustainable food systems that are inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework that minimise waste and conserve biodiversity while adapting to and mitigating impacts of climate change". This has been the most visible recent expression of a movement that has developed in recent years to make cities, which group around half of world population, major actors of the emergence of more sustainable food systems. It is also part of a larger movement that has been aiming at developing local sustainable food systems (Milan Urban Food Policy Pact). The city of Rimini could be part of this pact to strengthen the role of integrated food policies in regional and urban development strategies.

Educational Farms URBACT Project

Environmental Farms represent one of the possible choices that farmers have when moving away from the single idea of agricultural production, adopting an innovative approach to cope with the negative aspects of productivity or the agro-industrial paradigm (URBACT Project, 2018).
Amongst the partner cities of educational farms URBACT (Figure 30), six farm states from Cesena actively participated in the project.

Figure 10. URBACT Project and Cesena

Rimini Strategic Plan and Food Systems

Limiting land consumption is a strategic aspect in order to affirm a new vision of territorial development centred on the reuse of existing urban systems and the protection of agricultural land, the landscape and the environment. However, to respond to the question of which spatial strategies can support the development of a sustainable food system will require a broader discussion of the scope and opportunities for an integrated role of food in the Rimini Strategic Plan.

Figure 11. Scopes in Rimini Strategic Plan (Ridolfi 2022)

6.7 Conclusions

Emilia-Romagna is one the most productive landscapes of Italy. The Regione Emilia-Romagna and the city of Rimini have a strong structure of policies based on sustainable development goals. The content and support for these policies is organised by participatory processes. For the foodscape along the coast a food strategy could be developed with quantitative and qualitative objectives for re-territorialisation of the Food System. A food strategy for the coastal area could be developed with quantitative and qualitative objectives for re-territorialisation of the food system. Elements of this food strategy can be: (1) strengthening the connection between local producers and local consumers by creating short chain networks, for which some of the former colonie can have a function as a food hub. (2) Transforming current agriculture along nature reserves, nature development zones and landscape development areas into multifunctional, inclusive, and organic farms to help to protect and develop green infrastructure corridors. (3) Giving people the opportunity to grow their own food in the (peri) urban landscape for their physical and mental well-being

Integrate the food system resilience into the Rimini Landscape Observatory

The challenge is to align private and public interests, cross sectoral interests and make use of local knowledge. A landscape system cannot be transformed as a whole. Geels (2011) points out the importance of making use of niche innovations that can be strengthened by integrating them into a stronger driving force. By a multi-level governance approach that integrates the objectives of different participants into landscape quality objectives a solution may be found for competing claims on a landscape level. Goals that are formulated in a collaborative way, can set a future agenda for the foodscape in the coastal area.

The implementation of the European Landscape Convention (Council of Europe, 2000) proposes the formulation of landscape quality objectives and monitoring these by landscape observatories. Landscape observatories act as communication platforms that give joint responsibilities to all parties who use, protect, manage and maintain the landscape; provide cooperation opportunity between institutions and disciplines and enable public awareness about the importance and protection of the landscape. A local landscape observatory for Rimini could foster communication between niche innovations, make a link to deep democratic processes and strengthen the power of transformative actions by linking these to explicitly defined landscape quality objectives.

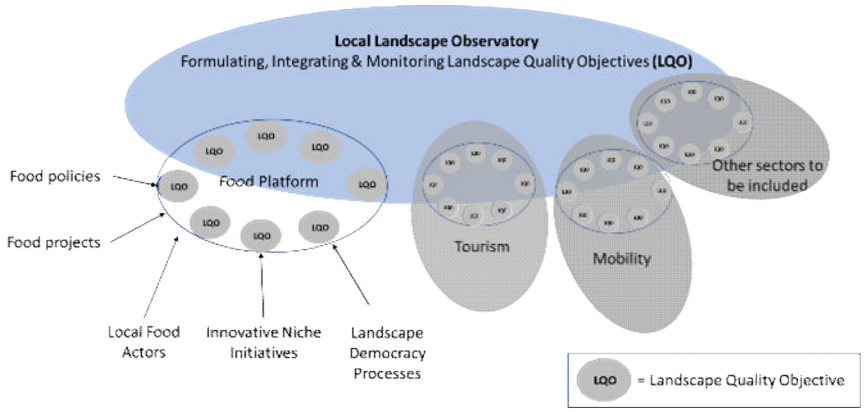


Figure 12. A local landscape observatory integrates goals for sustainable foodscapes and food systems

Recognising the physical reality of the area and the different ways in which it is perceived leads to due consideration being given to the views of farmers and other stakeholders, including the local population. These could be represented in a Food Platform. Landscape observatories can be a useful tool in strengthening the integrated landscape approach particularly in the planning and management of foodscapes in Rimini.

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Chapter 7. Outcomes and Future Perspective

7.1 The focus areas of the forums

Since 2012 LE:NOTRE Landscape Forums' have taken place in different city regions around Europe. These present a wide range of foodscapes with a rich variety due to differences in policies, social and cultural context and natural conditions (Figure 1 and Figure 2).

The Dragona loop near Rome is situated in the floodplain of the river Tiber in the peri-urban zone of the city. It has important agricultural heritage values and its ecological value is based on the connection with the river system and the nearby coastal habitats. The urban sprawl of Dragona threatens the area's identity and the historic landscape value. The way forward is seen in strengthening local brands, foster multifunctional agriculture and improving accessibility for leisure and recreation.

Petrovici in the rural fringe of Sarajevo carries the scars of the Balkan war. Its rural landscape is characterized by small scale agricultural activities and farmsteads surrounded by forests and mountain. In many plots the land ownership is unclear. People who are depending on farming are struggling for a decent standard of living. In general there is a need to build capacity for a new generation of farmers with knowledge produce food in a sustainable way. Proposals focus on clarify the land-ownership situation, to support farmers into new modes of multifunctional farming that includes facilities for leisure and tourism and to re-develop the touristic network in the area.

Pantelimon, north of the Colentina River Emerald Necklace of lakes is a transition zone between the metropolitan area of Bucharest and the countryside with agriculture and nature areas. Uncontrolled urban sprawl and the development of infrastructure have resulted in a fragmented landscape that still has valuable habitats and potential for farming. There are still valuable cultural areas, such as the monastery on the border of the lake. Vacated land is used for pastoralism. The proposal consists of a spatial strategy for green-blue infrastructure to provide a solid framework to better connectivity and higher ecological quality. Besides this the working group proposes to transform a monofunctional dairy farm that already has a pedagogical area into a multifunctional estate with a network of different types of agriculture, urban agriculture, community gardens and private plots. The wine and cheese production of the monastery could have a stronger brand and be connected with urban pastoralism and horticultural in a social setting.

Figure 1. Venues of selected LE:NOTRE Forums for Foodscapes (in bold text the foodscapes chapters that are included in this publication)

Rome, 2013

Sarajevo, 2014

Bucharest, 2015

Munich, 2017

Bratislava, 2020

Rimini, 2022

Figure 2. Foodscape characteristics of selected LE:NOTRE Forums

The area of Munich North consists of an urban, peri-urban and rural landscape. At the urban fringe there is a good accessibility, but further north the landscape is fragmented by roads. There are already many elements for the foodscape such as allotment gardens, multicultural gardens, pick-your-own farms, as well as organic farms and a producer of seeds. This is fostered by a strong spatial planning tradition. There is a need for more housing in the area, enhancing the recreational potential and improving landscape quality. The proposal defines three zones with each a specific range of food production types. In the urban zone these are more social oriented with urban farming, rental community plots, and allotment gardens. In the peri-urban zone adventure farms and pick-your-own gardens. A food hub as a part of a multifunctional farm can fulfil educational, production and processing functions.

The cross-border landscape near Bratislava is a rural area with a multi-cultural character. The area is separated from the city by large infrastructure and the river. The settlements of Kittsee, Jarovce and Rajka are near the three countries point of Hungary, Slovakia, and Austria. The BAUM project proposes an urban development plan as an integrated plan for the Bratislava region. The open agricultural landscape forms an important habitat of the great bustard, near Kittsee there is a small scale landscape with orchards that produce apricots. The proposal consists of using the great bustard as a guiding species for improving agro-biodiversity, further develop the greenbelt as a network of green-infrastructure to connect nature areas and improving the recreational network. Introducing regional crops and diversification of the orchards can help farmers to have a better income. Food hubs are a basis of connecting the city with its hinterland.

Emilia Romagna is one of the main food producing regions in Italy. The forum studied the coast of the Adriatic Sea with a focus on a stretch from the inland area near Cesena to the small fishing town of Cesenatico. The town is transformed into a seaside resort, but still has its traditional fishing and fish market which are important role for the local and regional economy. The landscape is diverse with the nature reserve of the salt pans in Cervia, vineyards, small scale agriculture and a cheese maker, tourist facilities along the coast and the cultural heritage of the former holiday colonies. The proposal consists of strengthening the connection between local food producers and local consumers and the tourist sector by creating short chain networks. For this some of the former holiday colonies can have a function as a food hub. A food council could

bring stakeholders together to develop an integrated approach for the food system that supports landscape quality.

7.2. Development of the approaches

A decade of case studies on the LE:NOTRE Forum foodscape show a clear development in the approaches, types of solutions, the policy background and future outlook. Details are presented in Annex 2. A Comparative FoodScape Table.

Approach

Gradually there is a shift in approach from an agricultural and rural perspective to a more integral approach of the food system as a whole, including producers, processors, distributors and consumers. While the first forums focussed on promoting rural production as a top down strategy, the latter have taken on a more participatory approach also involving less advantaged groups of people, such as migrants. While organic and ecological food production has always been important, it develops into an agroecological approach that includes both the ecological as well as the social aspects of foodscapes.

Types of solutions

The solutions in the first forums proposed the development of multifunctional and educational farms and branding of local products. Later forums focussed more on the food systems and promote short food supply chains which are making use of food hubs and urban farms. While the solutions in the beginning mainly addressed the position of farmers in the rural and peri-urban areas, the latter forums propose a complete range of urban and peri-urban production types, including a zoning scheme in Munich. The role of multi-level governance becomes more relevant that includes setting up food councils and linking national and regional strategies to local bottom-up initiatives.

Policy back ground

In the last decade there has been a shift of policies from sectoral oriented to integrated. The new EU CAP proposes nine goals for sustainable agriculture which are supported by the Farm to Fork (F2F) strategy and the New Green Deal.

Globally FAO promotes the transition to sustainable and climate-resilient agricultural policies and governance mechanisms, working with countries on reviewing their policies and investment strategies and helping them align their policies and programmes in support of implementing the 2030 Agenda for Sustainable Development. FAO envisions a sustainable food and agriculture system where food is nutritious and accessible for everyone and where natural resources are managed in a way that maintain ecosystem functions to support current as well as future human needs. FAO proposed the concept of Globally Important Agricultural Heritage Systems (GIAHS) which is a living, evolving system of human communities in an intricate relationship with their territory, cultural or agricultural landscape or biophysical and wider social environment. In collaboration with RUAF it published a handbook for building sustainable and resilient city region food systems. This pathway is supported by strategies which are started in the framework of the Milano Urban Food Policies Pact.

IPES-Food envisions a ‘Long Food Movement’ where the initiative is reclaimed by civil society and social movements – from grassroots organizations to international NGOs, from farmers’ and fishers’ groups to cooperatives and unions. This calls for thinking decades ahead, collaborating across sectors, scales, and strategic differences, working with governments and pressuring them to act, and transforming financial flows, governance structures, and food systems from the ground up.

Although the main orientation of policies and regulations is still sectoral, a civic movement could help to overcome the segregation between sectors. While the policy renewal on the international and national level slowly proceeds and is hampered by a huge influence of corporate agri-business and trade, a multi-level approach seems promising.

Future outlook

IPES (2019) clearly defined the main challenges of the current production system.
Environmental impacts such as loss of soil, unprecedented impacts on plant and insect life, by pesticides and nitrogen fertilizers, loss of environmental services such as pollination. Globally agriculture contributes up to 30% of greenhouse gas emissions, while huge imports of meat and fodder result in deforestation, evictions of local people, pesticide poisoning in the global south.
Health impacts such as air pollution by ammonia emissions, surface and drinking water pollution by pesticides and fertilizers, antimicrobial resistance and exposure to endocrine disrupting chemicals via foods, food packaging. Change in diets by industrial processing and marketing result in overweight and obesity, especially for the poorer population groups.
Socio-economic impacts consist of poor working conditions and livelihood pressures for farmers by power imbalances, for instance 70% of the global agrochemical industry is in the hands of only three companies, and up to 90% of the global grain trade is controlled by four multinationals.
The erosion of traditional food cultures and the emergence of urban lifestyles has disconnected people from how food is produced and from concepts such as the seasonality of fruits and vegetables.

While the first forums focused mainly on strengthening the link between the urban and rural areas, the proposed strategies are moving towards a more integrated planning of food systems, mainly focussing on city region food systems. To bring about a transformative change to more sustainable landscapes an integral landscape approach is essential. Landscape Observatories, which are defined in the Council of Europe's Landscape Convention, can play a role in monitoring the progress. The process of change needs a growing awareness of consumers and producers and building stronger networks between them.

Major events like the pandemic, earthquakes, effects of climate change such as flooding and draughts and war, stress the importance of food security and disaster management. Developing regional and local foodscapes can help to enhance food security and a more inclusive food system. Current trends in loss of biodiversity and human health call for nature inclusive ways of production and providing healthy and fresh food for citizens.

There is still a long way ahead to promote sustainable foodscapes. The challenge is to align private and public interests, cross sectoral interests and make use of local knowledge. A landscape system cannot be transformed as a whole. Geels (2011) points out the importance of making use of niche innovations that can be strengthened by integrating them into a stronger driving force. By a multi-level governance approach that integrates the objectives of different participants into landscape quality objectives a solution may be found for competing claims on a landscape level.

The LE:NOTRE Institute will continue to foster transformative change in regional and local landscapes in collaboration with hosting organisations of the Forum, local experts and civic society.

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Meryem Atík and Jeroen de Vries,

LE:NOTRE Institute

Annexes

Annex 1. Glossary of foodscape terms

Term	Definition / source	Page
Agribusiness	The system, dominated by corporate business that serves consumers globally and locally through innovation and management of multiple value chains that deliver valued goods and services derived from sustainable orchestration of food, fibre and natural resources. Please note that in this document we do not use the term in the wider sense.	25
Agricultural park	Agricultural parks are designed for multiple uses that accommodate small farms, public areas and natural habitats. They allow small farmers access to secure land and local markets; they provide fresh food, and are an educational, environmental, and aesthetic amenity for nearby communities. Agricultural parks facilitate the continuity of agriculture as the practice of cultivating the land in urbanised landscapes. The naming of the concept as a 'park' is intended to convey its role for open space preservation. While the term suggests the permanent land conservation and recreational use exemplified by the public park, it also evokes the traditional model of a business park, where multiple tenants operate under a common management structure. Agricultural parks are suitable for metropolitan areas and regions that want activated and permanently protected edges to contain cities and provide the 'sense of place'; viable agriculture as an integral part of community and regional health; access to fresh food, parks and green spaces (SUSTAINABLE AGRICULTURE EDUCATION 2005). Agricultural parks represent a specific component of Urban Agriculture (UA) that plays a key role in two global challenges: urbanisation and food security. UA can provide an important contribution to sustainable, resilient urban development and the creation and maintenance of multifunctional urban landscapes (COST-ACTION UAE 2012).	1, 59
Agroecology	the application of ecological principles to the study, design and management of agroecosystems that are both productive and natural resource conserving, culturally sensitive, socially just and economically viable (Altieri and Toledo 2011; Gliessman 2012; Fernandez et al. 2013). Agroecology is the application of ecological science to the study, design, and management of food systems. It also represents a social movement promoting the transition to fair, just, and sovereign food systems (Anderson et al. 2015:3 & Nyéleni Declaration, Mali, 27 February 2015) A practice, a science and a social movement that has been embraced by the international food sovereignty movement through the Declaration of the International Forum for Agroecology (V.E. Méndez, C.M. Bacon, R. Cohen, and S.R. Gliessman, Agroecology: A transdisciplinary, participatory and action-oriented approach)	132, 133
Agroecological urbanism	While urban planning is usually based on collective organisation, this interpretation is still uncommon for agriculture: often, cities do not look beyond food waste and small-scale urban agriculture. Michiel Dehaene (Ghent University) and Chiara Tornaghi (Coventry University) pioneered the scientific approach to agroecological urbanism, which focuses on boosting land-based agriculture in an urbanised landscape. To apply this academic concept in practice, they gathered together an international group consisting of land activists, sociologists, farmers' organisations, architects and researchers from other disciplines, to work around four cities. The research project, called 'Urbanising in Place', led to the publication of the online resource 'Building an Agroecological Urbanism'.	
Allotment garden	An area subdivided into small plots which are rented under a tenancy agreement. The owner can be a municipality or a private owner, and the complex can be targeted at a specific social aim. Tenants may be organised as members of an association.(UAE, p 24)	100,113

Term	**Definition / source**	**Page**
Aquaponics	Aquaponics is a food production system that couples aquaculture (raising aquatic animals such as fish, crayfish, snails or prawns in tanks) with hydroponics (cultivating plants in water) whereby the nutrient-rich aquaculture water is fed to hydroponically grown plants. (Wikipedia)	103
Biodynamic agriculture	Biodynamic agriculture is a form of alternative agriculture based on pseudo-scientific and esoteric concepts initially developed in 1924 by Rudolf Steiner (1861–1925). It was the first of the organic farming movements. It treats soil fertility, plant growth, and livestock care as ecologically interrelated tasks, emphasizing spiritual and mystical perspectives.	66
CAP	Common Agriculture Policy of the EU in 2023 focusing on ten objectives: to ensure a fair income for farmers; to increase competitiveness; to improve the position of farmers in the food chain; climate change action; environmental care; to preserve landscapes and biodiversity; to support generational renewal; vibrant rural areas; to protect food and health quality; and fostering knowledge and innovation. (https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cap-2023-27_en)	110
City Region Food System (CFRS)	A system that provides better connections among cities and towns and between them and their rural surroundings for the activities and relationships in the food cycle: growing, producing, processing, distributing, marketing, retailing, storing, preparing, consuming and disposing. An ideal CRFS fosters four interconnected elements throughout the food chain: food security and nutrition; livelihoods and economic development; sustainable natural resources management; social inclusion and equity.(FAO and RUAF 2015)	
Community garden	Garden, mainly organised in a bottom-up process, focusing on growing vegetables, herbs and flowers, and composting, while building social networks, building meeting places and establishing a sense of community. Educational and cultural activities are an essential part of their programme. (UAE, p 25)	17,92,94
Community supported agriculture (CSA)	A partnership between farmers and consumers in which the responsibilities, risks and rewards of farming are shared. CSA helps to address increasing concerns about the lack of transparency, sustainability and resilience of our food system. It is one of the most radical ways that we can re-take control and ownership of our food system. The main principle of CSA is the community supports the farmer through a direct connection. There are no 'middlemen,' what is produced on the farm goes directly to the consumer. (https://communitysupportedagriculture.org.uk/what-is-a-csa)	101,103
Ecological farm	Ecological farming ensures healthy farming and healthy food for today and tomorrow, by protecting soil, water and climate. It promotes biodiversity and does not contaminate the environment with chemical inputs or genetically engineered plant varieties. Ecological farming encompasses a wide range of crop and livestock management systems that seek to: (1) Increase yields and incomes (2) Maximize the sustainable use of local natural resources and (3) Minimize the need for external inputs.(www.greenpeace.org/international/publication/6923/defining-ecological-farming/)	56
Edible forest	See: food forest	103
Educational farm	A farm that offers a teaching tool, addressing the production, processing, and consumption of foods and their environmental impact, with a high potential for raising public awareness and spreading environmentally and climate-resilient growing ideas and practices. (UAE, p24)	91
ELC	Council of Europe landscape convention, 2000. (www.coe.int/en/web/landscape)	

Term	**Definition / source**	**Page**
F2F	Farm to Fork Strategy of the EU which aims to accelerate the transition to a sustainable food system that should: (1) have a neutral or positive environmental impact, (2) help to mitigate climate change and adapt to its impacts, (3) reverse the loss of biodiversity, (4) ensure food security, nutrition and public health, making sure that everyone has access to sufficient, safe, nutritious, sustainable food, and (5) preserve affordability of food while generating fairer economic returns, fostering competitiveness of the EU supply sector and promoting fair trade. (https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en)	132
Food democracy	the process in which actors regain democratic control over the food system - control of seeds, biodiversity, land and territories, waters, knowledge, culture, and the commons, for its sustainable transformation. (Nyeleni Declaration-2015)	
Food deserts	Geographic areas in which residents' access to affordable, healthy food options (especially fresh fruits and vegetables) is restricted or non-existent due to the absence of grocery stores within convenient travelling distance.	
Food forest	A forest that imitates natural ecosystems by combining trees, crops and (sometimes) livestock. Where a monoculture uses only one layer for food production, a food forest is a polyculture with many layers (see figure 1). The top layer is the canopy or tall tree layer with trees around nine meters high, mostly nut and fruit trees or nitrogen-fixing trees. The second layer is the low tree layer, with trees between three and five meters in height, mostly fruit trees. Layer three contains shrubs, between the small trees. These are mainly berries, fruit, nut and currant shrubs, but can also be medicinal and flowering shrubs. In the herbaceous layer underneath, one finds perennial plants without woody stems, such as medicinal herbs and bee-forage plants. The fifth layer is the rhizosphere, consisting of root crops like potatoes or carrots. (RUAF, Urban Agriculture magazine, number 33, November 2017, p 35)	103
Food hub	A food hub is a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers in order to satisfy wholesale, retail, and institutional demand. They present an opportunity for communities to make healthy and local food sourcing a profitable enterprise for producers, distributors, retailers, and other business types (e.g., worker-owned co-ops) and aim to better connect local food producers to distributors and/or consumers. (www.healthyfoodaccess.org)	103,115
Food security	A situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Based on this definition, four food security dimensions can be identified: food availability, economic and physical access to food, food utilization, and stability over time. (https://a4nh.cgiar.org/2020/01/26/glossary-food-systems)	
Food system	Food systems encompass the entire range of activities involved in the production, processing, marketing, consumption and disposal of goods that originate from agriculture, forestry or fisheries, including the inputs needed and the outputs generated at each of these steps. (Source: FAO, 2013) Food systems also involve the people and institutions that initiate or inhibit change in the systems as well as the sociopolitical, economic and technological environment in which these activities take place.	113,115
Foodscape	Foodscapes are understood as all those areas that contribute to food production such as arable land and farms, orchards, allotments, and vegetable gardens in combination with the social capital they build.	1, 100, 111, 139
Forest garden	See: food forest	67

Term	**Definition / source**	**Page**
Globally Important Agricultural Heritage Systems	GIAHS - A GIAHS is a living, evolving system of human communities in an intricate relationship with their territory, cultural or agricultural landscape or biophysical and wider social environment. https://www.fao.org/giahs/en/	
Inclusive landscapes	A landscape can be called 'inclusive' when it provides a communicative space in which different perspectives, values, identities, preferences and conflicts interest of citizens, inhabitants and organizing actors come together. ((Kamplage, 2017).	100
Landscape	Landscape' means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors (ELC 2000)	
Landscape approach	A landscape approach could be defined as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Principles are to connect spatial planning and multi-stakeholder objectives, to perform climate-smart practices at a landscape level, to diversity the land use across the landscape, to manage the land use interactions at a landscape scale. Ecosystem services have to be in consideration for each step of developing a landscape approach for any context, as well as the impact of human activities from a multi-sectoral perspective. (LE:NOTRE Forum publication Rimini)	1, 16
Local food	Food commodities that are produced and processed within a defined geographic area in which the distribution chain will be short between producer and consumer (Kneafsey, M.; Venn, L.; Schmutz, U.; Balázs, B.; Trenchard, L.; Eyden-Wood, T.; Bos, E.; Sutton, G.; Blacket, M. Short Food Supply Chains and Local Food Systems in the EU. A State of Play of their Socio-Economic Characteristics; EU Commission: Brussels, Belgium, 2013)	16, 148
MUFPP	Milan Urban Food Policy Pact: an international agreement among cities from all over the world, committed "to develop sustainable food systems that are inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework, that minimize waste and conserve biodiversity while adapting to and mitigating impacts of climate change". (https://www.milanurbanfoodpolicypact.org)	113
Multi-functional farm	A farm that offers in addition to food production services for pedagogy, education, recreation and can include besides the productive plots also family gardens, community gardens, sites for recreation and leisure.	104
Organic farming	A mode of farming that includes a sustainable management system that is based on the principles for respect for nature's systems and cycles and the sustainment and enhancement of the state of the soil, the water and the air, of the health of plants and animals, and of the balance between them; the preservation of natural landscape elements, such as natural heritage sites; the responsible use of energy and natural resources, such as water, soil, organic matter and air; the production of a wide variety of high-quality food and other agricultural and aquaculture products that respond to consumers' demand for goods that are produced by the use of processes that do not harm the environment, human health, plant health or animal health and welfare; ensuring the integrity of organic production at all stages of the production, processing and distribution of food and feed; the appropriate design and management of biological processes, based on ecological systems and using natural resources which are internal to the management system, using methods that: use living organisms and mechanical production methods; practice soil-related crop cultivation and land-related livestock production, or practice aquaculture which complies with the principle of the sustainable exploitation of aquatic resources; exclude the use of GMOs, products produced from GMOs, and products produced by GMOs, other than veterinary medicinal products; are based on risk assessment and the use of precautionary measures	17, 65, 139

Term	Definition / source	Page
	and preventive measures, where appropriate; the restriction of the use of external inputs; where external inputs are required or the appropriate management practices and methods referred to in point (f) do not exist, the external inputs shall be limited to: inputs from organic production; in the case of plant reproductive material, priority shall be given to varieties selected for their ability to meet the specific needs and objectives of organic agriculture; natural or naturally-derived substances; low solubility mineral fertilisers; the adaptation of the production process, where necessary and within the framework of this Regulation, to take account of the sanitary status, regional differences in the ecological balance, climatic and local conditions, stages of development and specific husbandry practices; the exclusion from the whole organic food chain of animal cloning, of rearing artificially induced polyploid animals and of ionising radiation; the observance of a high level of animal welfare respecting species-specific needs. (Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007)	
Paludi culture	Wet agriculture and forestry on peatlands, which combines the reduction of greenhouse gas emissions from drained peatlands through rewetting with continued land use and biomass production under wet conditions. The concept was developed at Greifswald University (Wikipedia).	103
Permaculture (farm)	An approach to land management and settlement design that adopts arrangements observed in flourishing natural ecosystems. It includes a set of design principles derived using whole-systems thinking. It applies these principles in fields such as regenerative agriculture, town planning, rewilding, and community resilience. Permaculture originally came from "permanent agriculture", but was later adjusted to mean "permanent culture", incorporating social aspects. The term was coined in 1978 by Bill Mollison and David Holmgren, who formulated the concept in opposition to modern industrialized methods instead adopting a more traditional or "natural" approach to agriculture.	53
Pick your own farms	A farm where one can pick fruit or harvest vegetables oneself and then paying for the amount you have picked.	100
Regional branding	A way to promote rural regions and support development of socially, culturally and environmentally oriented economies in areas that are interesting due to their natural and cultural heritage.	17, 101
Self growing farm-krautgärten	A plot where one can grow one's own vegetables, flowers, berries. Sometimes organised in parallel plots where the farmers prepares all, or sows and rent it out to participants, who maintain and harvest the crops.	100
Short food chains	The food supply chain has four components namely food production, food storage and distribution, food processing and packaging and retails and markets (HLPE, 2017).	131
Sustainable agriculture	Is a very broad definition of farming in sustainable ways meeting society's present food and textile needs, without compromising the ability for current or future generations to meet their needs. It can be based on an understanding of ecosystem services. There are many methods to increase the sustainability of agriculture. When developing agriculture within sustainable food systems, it is important to develop flexible business process and farming practices. (Wikipedia)	60
Therapeutic gardens and farms.	Sites meant to provide healing effects of gardening and agriculture for the treatment of mental disorders, autism, Alzheimer's disease, cerebral paralysis, addition to drugs, alcohol, etcetera. (UAE, p24)	

Term	**Definition / source**	**Page**
Urban agriculture	Spans all actors, communities, activities, places and economies that focus on biological production in a spatial context, which – according to local standards, is categorized as 'urban'. UA takes place in intra- and peri-urban areas and one of its key characteristics is that is more deeply integrated in the urban system compared to other agriculture (UA Europe, p 21) The growing of plants and the raising of animals within and around cities for both commercial and non-commercial purposes. The most striking feature of urban agriculture, which distinguishes it from rural agriculture, is that it is integrated into the urban economic and ecological system: urban agriculture is embedded in -and interacts with- the urban ecosystem. Such linkages include the use of urban residents as labourers, use of typical urban resources (like organic waste as compost and urban wastewater for irrigation), direct links with urban consumers, direct impacts on urban ecology (positive and negative), being part of the urban food system, competing for land with other urban functions, being influenced by urban policies and plans, etcetera.	100, 114
Urban farm	Multifunctional farms, operating in the urban context, providing and processing food, and meeting additional demands for recreation and tourism, also providing services and goods such as landscape management, environmental measures, land rental and direct marketing. There are several types, some focusing more social and educational services, others focusing on food and circularity (material flows).	100
Urban gardening	The practice of growing vegetables, fruit and plants in urban areas, such as schools, backyards or apartment balconies.	103
Urban pastoralism	As a practice: an extensive system of animal husbandry that involves transhumance and/or seasonal grazing of urban and peri-urban, mostly 'unenclosed' areas dominated by semi-natural vegetation. A specific phenomenon of the beginning of the 21st century that evokes pastoral activity in urban interstices (predestined to other functions) in a planned or spontaneous way depending on the context.	92

Annex 2. Table comparing the content of the foodscape chapters

Evaluation of LE:NOTRE Landscape Forums' Foodscapes: Rome, Sarajevo, Bucharest, Munich, Bratislava, and Rimini

Landscape Forums'	***Rome 2013***	***Sarajevo 2014***	***Bucharest 2015***	***Munich 2017***	***Bratislava 2020***	***Rimini 2022***
Selected site	Peri-urban "urban fringe" **Dragona** loop	Rural fringe around Sarajevo and **Petrovici**	**Pantelimon,** Colentina Emerald Necklace in the northeast part of the Bucharest region.	**North fringe** of the metropolitan area of **Munich**	**Cross-Border** Landscapes with **Kittsee, Jarovce and Rajka** between Hungary, Bratislava and Austria	Transect of Cesenatico Cesena to coastal Cervia and Cesenatico
Present Day *situation*	Having high cultural, ecological, agricultural values but under the pressure of urban expansion on the outskirt of Rome	Family run farmstead on the periphery of Sarajevo	Industrial and agricultural activities are the main economic functions.	Traditional peri-urban agriculture and urban gardening activities in Munich region	Different agricultural patterns create distinctions for each city region in the crossing-borders.	Land fragmentation, higher land prices particularly on coastal plain, abandonment of mountain settlement
Potentials	Highly fertile flatlands, archaeological site, monastery, agro-tourist villa, hunting ground, rivers, Cernica forest, lakes, ponds	High biodiversity and landscape diversity in mountains and forest and small scale eco-farming	Heritage, hydrological, farming as well as governance value on the urban – rural boundary	A regional food system with urban gardening, allotment gardens as well as the traditional land-based agriculture, a growing trend for regional products	Diversity in farming landscapes, traditional orchards and fields highly characterised by narrower planting lines, boundary demarcations and Danube river	Family run food enterprises, local food initiatives, certified in local products, a close link between producers and consumers.
What kind of approach	A strategy for agricultural on the outskirts of Rome for promoting the rural fringe in the Dragona Loop.	Alternative forms of agriculture and forestry	Integrating Pantelimon in Bucharest master plan which now is limited to the city fringe to the governance of the National Institute of Agriculture and Cadastre.	Integrate urban foodscapes into urban and open space planning	Cross-border strategies that can be formulated to better integrate the foodscape between the three countries	Participatory processes in policies based on sustainable development goals of the Regione Emilia-Romagna and the city of Rimini
Type of approach changed	Questioning financial viability of current agricultural practices and new added value by leisure activities.		*Pantelimon* is planned for dwellings and industrial activities as big retail spaces, logistic. Accordingly, a shift from Ministry of Forestry into Ministry of Environment is expected.	To develop producer – supplier – consumer chains that transcend through all urban, peri-urban and rural zones to make foodscapes accessible and sustain foodscapes	Master Plan for Rural Areas in Austria's municipalities; National Development and Territorial Development Concept based on Hungary's regional development plan & National Rural Development Strategy	Definition for the specification of the "peri-urban agricultural areas" in the planning process.
Different solutions and proposals	Local food production a combination of different types of food production, possibly including organic, could help boost the local agricultural economy and identity	Infrastructure development improve communication between the locals and to organise Green farmer markets in Trebević, Petrovići and in the city of Sarajevo	For coming physical developments: is obligatory to keep 3 – 5 meters distance between the water's edge and the house to create an open-green zone around the lake and to keep 50 meters distance from forests in Pantelimon	Creating ad food chain between producers and consumers in the periphery between rural and urban zones	Common Agricultural Policy (CAP), the draft for a Common Food Policy, the European Regional Development Strategy, The European Territorial Cooperation (ETC) and the national policies of Austria, Slovakia and Hungary.	Strengthening the connection between local producers and local consumers by creating short chain networks, for which some of the former colonies can have a function as a food hub

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Development in the general policies	Integrated concepts for local food production, leisure and enhancing identity so that Dragona Loop can be developed in a sustainable way.		Currently there is no strategy for agriculture, nor for agricultural heritage in Pantelimon and it is rather urban strategy high density apartments		Spatial transformation of peri-urban areas and encouraging foodscapes around the cities in Slovakia, branding and regional products in Austria, National Rural Development Strategy and Programme for food, agriculture, rural development and environmental protection in Hungary	Rimini Strategic Plan and Food Systems
Concepts of foodscapes develop?	Multi-disciplinary and multi-cultural approaches	Ecological production like permaculture and biodynamic gardens mountain Trebević and in village Petrovići	Future solutions, connectivity and diversification of local products and increase their added value.	Concept for an interactive, inclusive, multifunctional farm that involves children and school classes, refugees, families, disadvantage people to provide access to healthy food, social and cultural integration.	Cross-regional initiatives, a series of cross-border / cross-regional food hubs, a special market strategy that connect the rurban area with cities and villages	A food strategy in Rimini for re-territorialisation of the food system.
A future outlook on foodscape	A more holistic approach to infrastructure that could help improve both existing and future quality of a third landscape type – the fringe in between rural and urban.	Integrated planning approach for the preservation and protection of natural resources as key components for sustainable foodscape development	Building models on the existing good example in the case of milk farm and platforms for education and good example for other farmers such as sustainable agriculture, creating small market for local products	Developing multi-functional use peri-urban foodscapes to foster inclusiveness for the city and the inhabitants.	Multifunctional and sustainable foodscapes that transcend the borders where European and national policies can be implemented.	*Local Branding* and *Stakeholder Engagement* in the food system including producers (farmers, market gardeners, fishermen, aqua-farmers), processors (mills, cheese makers, food & drinks processors and packagers), distributors (wholesale, retail, markets) that deliver products and services to consumers.