

ipsla

SARAJEVO

Recovering Trebević Mountain

The Urban Landscape of Sarajevo

International Master of Landscape Architecture (IMLA)

in cooperation with

University of Sarajevo - Faculty of Forestry

International Burch University - Faculty of Architecture

Association of Landscape Architects in Bosnia and Herzegovina

ijala



RECOVERING TREBEVIĆ MOUNTAIN

THE URBAN LANDSAPE OF SARAJEVO

University of Sarajevo – Faculty of Forestry
International Burch University – Department of Architecture
IMLA Programme: Nürtingen-Geislingen University (HfWU) and
Weihenstephan-Triesdorf University of Applied Sciences (HSWT)
University of Sarajevo, Faculty of Agriculture
Association of Landscape Architects in Bosnia and Herzegovina

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INTRODUCTION

MERGING OLD AND NEW GREEN INFRASTRUCTURE IN MISSION FOR THE REVIVAL OF SARAJEVO



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Today, two decades after the bloody war, Sarajevo is struggling to find a strong and cohesive paradigm for a new proactive and stimulating urban development strategy for the wounded city and its surroundings. The topography of Sarajevo is marked by mountains with natural forests and intact fauna habitats enriched and partly urbanized by olympic infrastructure during the 1980s. The core of the city located in the Sarajevo valley is affected by de-urbanization and ruralization of the 1990s and 2000s developments that dissolved the urban fabric - transforming Sarajevo into a shrinking city with empty open space in the core and increased sprawl in form of informal settlements for wartime refugees on the urban edges.

This workshop with the goal to analyze the potentials for interventions of the Trebević mountain located in the very

vicinity of Sarajevo's old core was a follow-up activity of the LE:NOTRE Landscape Forum in 2014, implemented as a collaboration of several local and international stakeholders including Nürtingen-Geislingen University, the University of Sarajevo, the Burch University in Sarajevo, the Association of Landscape Architects in B&H, local policy and industry partners as well as in synergy with the *Reactivate Sarajevo* initiative by the UrbanThink Tank Chair at ETH Zurich's NSL.

The workshop aimed to look at potentials of green infrastructure as the real organizational force for the built environment of the city. The workshop represents an interesting exercise by looking at the local social and ecological systems and proposing interventions that are rooted in sustainable practices but also critically introducing innovative

green infrastructure paradigms from an international perspective. The workshop also opened several sub-questions about the directions and potential challenges of Sarajevo's (sub) urban future scenarios and spotlighted further challenges to be solved in the next steps of the collaboration in the mission to contribute to the real-life revitalization processes of Sarajevo today.

THE TRANSFORMATIVE POWER OF A SUBLIME LANDSCAPE IN THE HEART OF EUROPE



Dr Ellen Fetzer
IMLA programme HfWU Nürtingen-Geislingen
LE:NOTRE Institute Board
Vice President of ECLAS
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Trebević Mountain is a sublime space. This character is also revealed by its name which is derived from the old Slavonic term 'trebište' meaning 'altar'. This toponym relates to ancient worship activities that have been practiced on the mountain for centuries. How could this mountain ever move away so far from its original cultural identity?

In his travel report on Bosnia, published in 1897, Heinrich Renner describes his hiking route from the Sarajevo city centre to the Trebević hill top as follows:

"We pass the magistrate building and ascend on a rather stony path up to the Hrid height, also called the small urban forest (Stadtwäldchen). Towards the Miljacka river there is a small watch tower on an advanced crest. Moving further upwards we reach the crestline of the heights accompanying the Miljacka river and now there is a change of meadows with larger and smaller bushes, in between some

enclosed farmstead – an idyllic scene in the middle of rough mountains. On the way to the small urban forest there is a Turkish coffee house where a fantastic mocha is served. The view is surprisingly beautiful.

Following the so-called 'Appelweg', leading from behind the magistrate building up to the mountain, the Velika Kapa can be reached within 1,5 hours. This is one of the most rewarding viewpoints on a high and pointed cone. We then reach the gorge of the Bistrik brook separating the Trebević massive from the preceding heights. A bridlepath leaves from the Kapa to the peak of Trebević, 1629 metres above sea level. The route to the top of the hill takes four hours and the last parts lead through forests and meadows with alpine flora. The panoramic view from Trebević to the North and to the West is almost unlimited."

(Renner, 1897, Durch Bosnien und die Hercegovina kreuz und quer, pp 103 – 104, own translation)

This brochure documents a follow-up of the third LE:NOTRE Landscape Forum held in Sarajevo in May 2014. Our group returned to this wonderful place end of May 2015 to continue the work with the great colleagues and students from the University of Sarajevo, the International Burch University and the Association of Landscape Architects in Bosnia and Herzegovina. Many thanks to everyone who helped us implementing this!

Sarajevans give us an impressive example by reconquering a landscape that has suffered a lot. People want their mountain back as a place for recreation, well-being, contemplation and - identity. This is a great achievement. But still, multiple needs have to be balanced on Trebević. Landscape architecture can help making this process more sustainable and inclusive for everyone involved.



View over the Sephardic cemetery on the modern city in the Miljacka valley. The cemetery is an important green link.

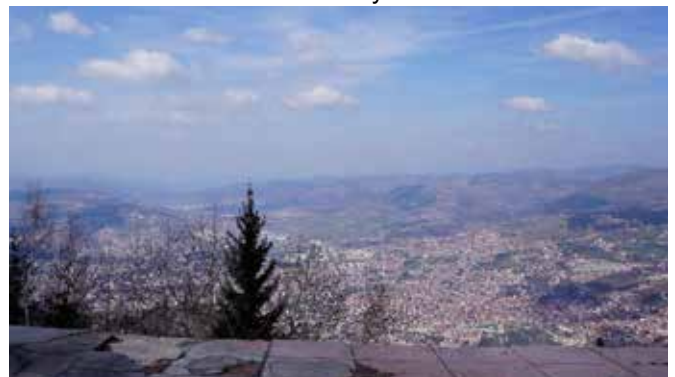


Houses crawling on the hill



Scenic rural hinterland on the southern side of Trebević mountain

Ruins of the former panoramic restaurant Vidikovać and the view from there down to the city



CONTENTS

INTRODUCTION
8

STUDIO TEAM
14

SARAJEVO
UNIFIED
16

SUSTAINABLE
INFRASTRUCTURE
22

ALONG THE
HISTORICAL LINES
30

THE CELL OF
COMMUNITY
34

NATURAL
HERITAGE
44

AGRI-SOLUTION
FOR TREBEVIC
50

NEXT DESTINATION
TREBEVIC
56

IMPRINT
62

A LANDSCAPE OF MEMORIES



“Landscape’ means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors....(This convention) concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes...

European Landscape Convention, Council of Europe, Florence 2000

Sarajevo is clearly one of the few cities in Europe where city and landscape are almost symbiotic. The mountains surrounding this urbanised valley are omnipresent and strongly shape the cities’ morphology. Sarajevo is easily readable by its topography: Starting

from the medieval nucleus, the former provincial capital at the edge of the Ottoman Empire, embraced by a soft arc of hills with the former fortress rock at its eastern end. Moving to the west, where the valley gets wider, the urban extension of the Austro-Hungarian period continues and transforms slowly into the linear urban landscape of the second half of the 20th century when the Bosnian capital was part of the socialist republic of Yugoslavia.

Trebević is a principal landmark of Sarajevo. With its height of around 1600 metres the hill is visible from almost everywhere in the city. It

directly faces the old town central market, the historical and cultural core of Sarajevo. The potential of this vicinity has been used for quite a long period. While the Ottoman rulers regarded the mountain primarily as a wood resource the Austrian government, after taking over the power at the end of the 19th century, started a reforestation programme. A system of pathways and roads was built as well as some mountain huts and even a hotel.

After WWII Sarajevo saw important urban developments in its role as provincial capital in a young socialist republic. A cable car connecting the city centre with Trebević Mountain

was installed as early as 1959. The cable car led half way on the mountain where also a panoramic restaurant, nicely embedded into the landscape, was built. Based on this infrastructure, exploring the landscape and nature of Trebević Mountain became a common and regular experience for almost every citizen. The public awareness of Trebević culminated with the 1984 Winter Olympics when the cable car brought hundreds of international guests to the hill where a part of the games was organised. Some infrastructure elements of this time, in particular the famous bob sleigh, are still existing, yet in a miserable condition.

The hill saw its darkest time during the war from 1992 to 1995 and the siege of Sarajevo during which the topography of the city played again a crucial role. Shelling of the city was practically organised from Trebević hill and the adjacent mountain chains which turned the mental image of this landscape upside down. Much of the former connectivity to the hill got lost when the cable car was destroyed. But more importantly, the hill was absolutely inaccessible because of landmines placed at the former front lines. This prevented any attempt for recovering the site during the first post-war decade.

Today, the hill is crossed by the frontier separating the two Bosnian entities which is both an administrative and a political challenge. Mine fields have recently been declared as cleared which is of course the basis for any future oriented activities. In 2014 the part of the hill belonging to the canton of Sarajevo was designated as protected area. Restaurants are reopening, people are coming back.



View from Trebević mountain to the Sarajevo valley, image: Admir Aladžuz



Trebević mountain seen from Ciglane settlement in the city centre

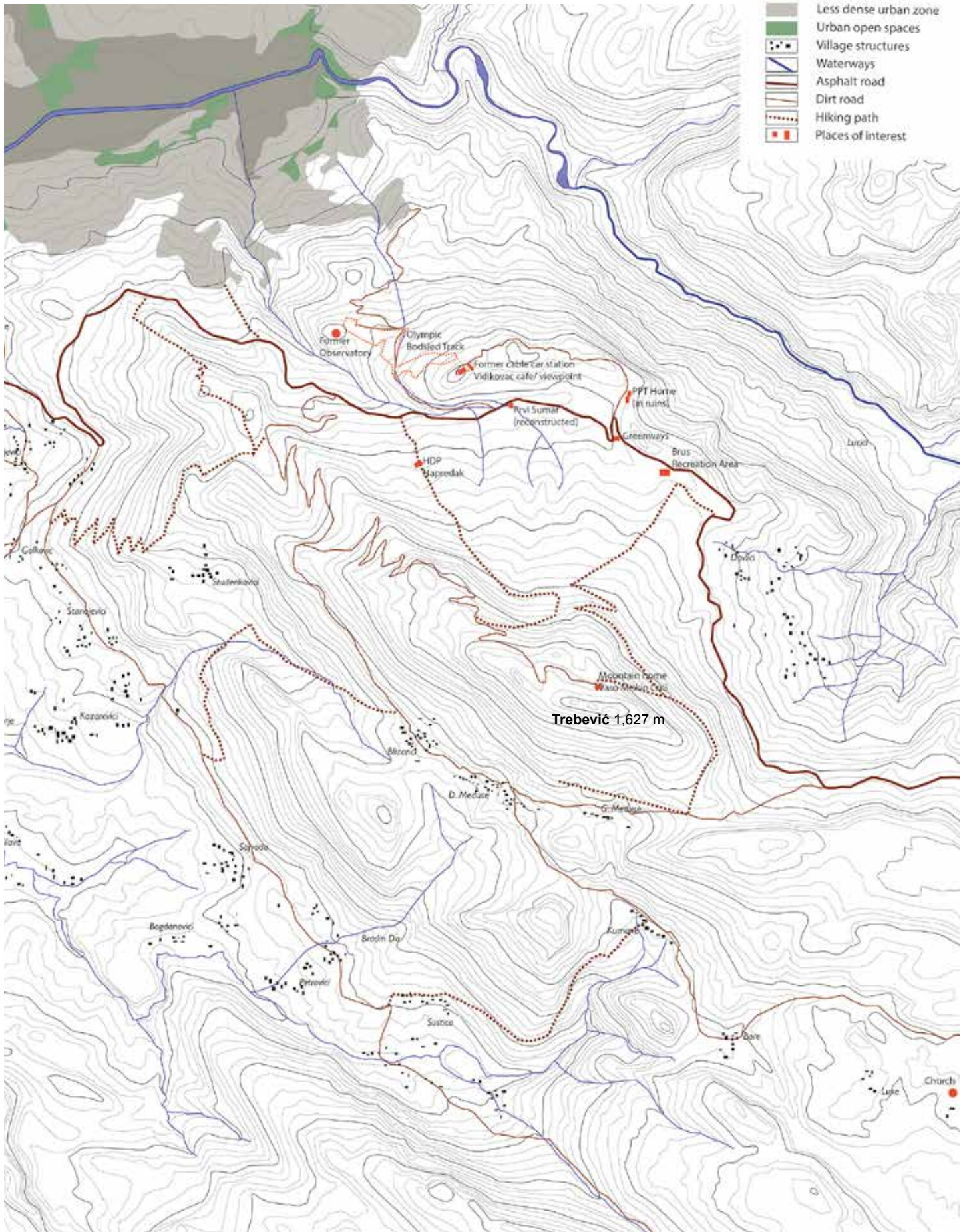


Panoramic restaurant Vidikovač and cable car on a postcard from 1966



The Bob Sleigh was built for the Olympic Winter Games in 1984

TOPOGRAPHY AND POINTS OF INTEREST



TREBEVIĆ THEMES

NATURE

Trebević has unique qualities as a habitat for flora and fauna. Different landscape units can be identified following the transition from city to nature: peri-urban gardens, orchards, pastures, meadows, woodlands, gloves, rocks. A rural landscape with traditional patterns extends at the other side of the hilltop beyond the entity boundary. Landscape fragmentation is still low.

From this perspective, concepts are needed that:

- secure and enhance the natural foundations, in particular water, soil, flora and fauna
- integrate aspects of landscape and nature protection into other sectors with competing interests, in particular recreation and tourism, forestry, agriculture, infrastructure development and urban planning
- find innovative ways of boosting small-scale local economy with activities related to landscape and nature protection

RECREATION

Trebević looks back at hundred years of tourism and recreation activities. But this tradition was

forced to stop all at once with the civil war. Now, 20 years after, with the minefields being cleared, the time has come to reconnect to the pre-war connotation of this mountain.

Concepts are needed that:

- identify the potential of this area for recreation and tourism and define which activities are possible and desirable
- design connectivity in this field between the town, the mountain and its rural hinterland
- identify what would be the spatial consequences of those activities
- outline a sustainable concept by integrating adjacent, partly competing, sectors

HERITAGE

Adding architecture or infrastructure elements to a site as exposed as Trebević is a challenge. Sensitive design approaches are required based on a profound contextual and topographic understanding. If Trebević will regain its function as a local recreation area, new functions will need to be integrated. This could be either a redevelopment of the former, now ruined, elements (like the

observatory, the bob sleigh or the panoramic restaurant) or the integration of totally new elements. New concepts should

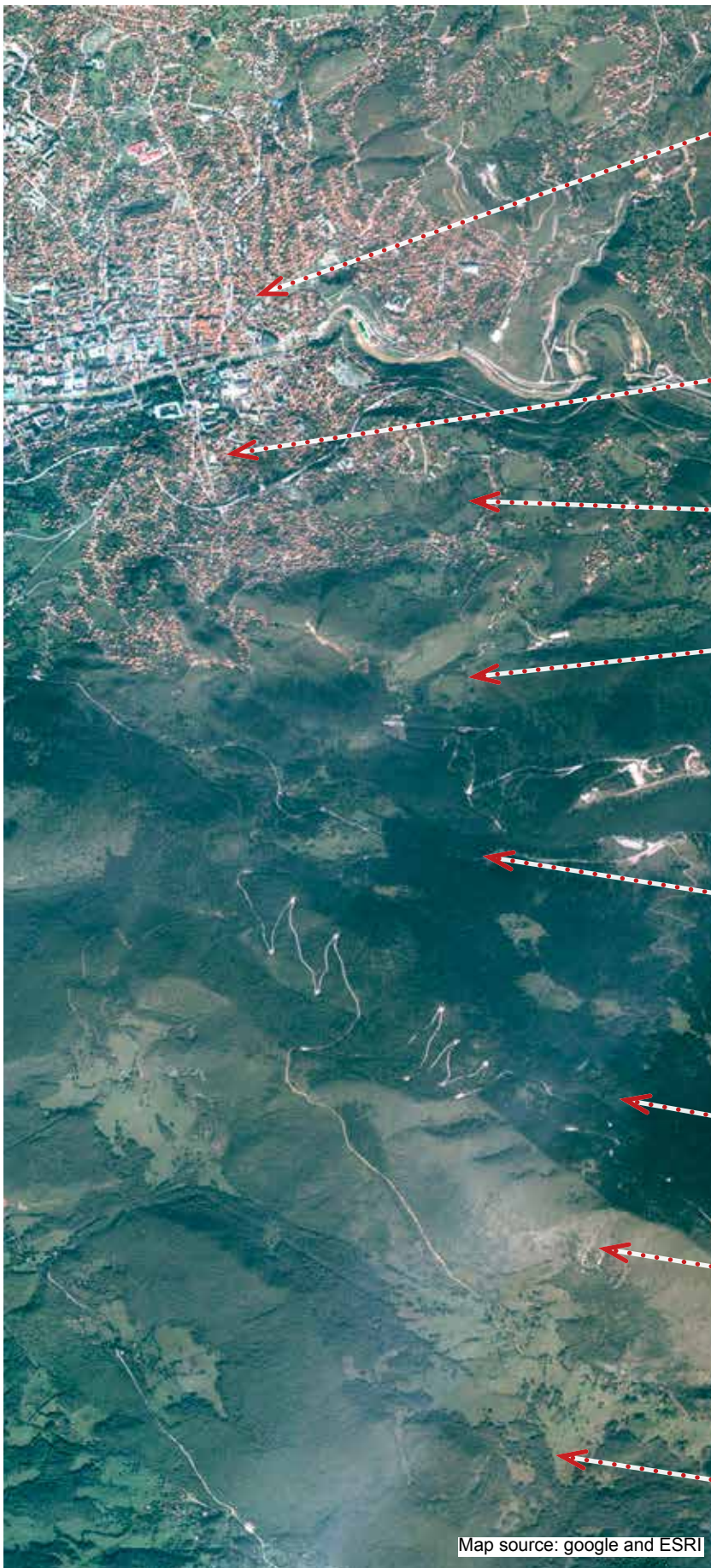
- consider the positioning of architecture in relation to the landscape context of the site and the entire city
- consider the dialogue of architecture with a natural environment and the transition between both
- link local architectural interventions consistently to a general concept

COOPERATION

Trebević has been a landscape unit since the Devonian period. As a legacy of the recent civil war the mountain is now divided into two different entities with different planning instruments and governance practices. Can Trebević become again a unifying element of which many people can profit, on both sides of the entity division line? Concepts are needed that:

- envision an innovative governance model for the entire area of Trebević mountain
- identify the potentials of such an approach for the local economy and sustainable regional development

LANDSCAPE FEATURES



Old town in the Miljacka river valley with former bottom station of Trebević cable car.

Urban sprawl on Trebević lower mountain slopes

small-scale farming with high scenic and biodiversity values

Destroyed infrastructure: bob sleigh, panoramic restaurant cable car station and observatory

Areas reforested with non-native species (started during the Austro-Hungarian period).

Mountain top at 1629 m

South exposed mountain slope with grassland habitats and rare species

Rural hinterland with vernacular villages and subsistence farming

Map source: google and ESRI

STUDIO WORKFLOW

ANALYSIS

The mixed working groups from the three universities have been formed in advance to the site visit. This allowed for collaborative desk research already before the actual workshop. Each working group analyses a specific layer of the landscape. This information was presented on the third workshop day in the form of a plenary presentation. Analytical data were shared afterwards.

The ten analysis themes were:

1. The wider context: landscape units and peri-urban patterns
2. Land use change in the last 100 years, history of the area
3. The built environment: typologies and tendencies, legal framework
4. Traffic infrastructure and patterns of movement
5. Water bodies + water system
6. Biotopes, flora, fauna and natural monuments, trees, local climate
7. Agriculture and horticulture
8. People and behaviour patterns, quality of life and socioeconomic data
9. Industrial uses and technical infrastructure
10. Visual appearance: landmarks, topography, borders, connections, limits

OUTPUTS

Output 1:

Landscape Assessment and Analysis of Driving Forces

The thematic analysis started during the online phase and was continued and refined on the basis of site observations. A group presentation was held by mid of the first workshop week.

Output 2:

Building a guiding concept

After bringing together the different analysis themes each group decided on a focus theme and worked on a guiding concept for Trebevic mountain as a whole. The ideas were presented and discussed during an interim plenary at the end of week one.

Output 3:

Translation and visualisation

During the second week each group was free to design their own work programme in accordance with the guiding concept identified. Three levels of specification were to be distinguished: strategic, territorial or site specific. The teams could either focus on one of them or use mixed approaches.

All projects had to include a sustainability model in which aspects of governance, finance and participation are outlined.

CONCEPTS

The following seven concepts were further elaborated:

1. Sarajevo unified
2. Sustainable mobility
3. Along the historical lines
4. Reinterpretation of the cell of community
5. Landscape and biotopes
6. Agri-solution on Trebević
7. Next destination: Trebević

All projects build on a specific aspect of the landscape and elaborated it further. As a whole, the ideas are very much complementing each other and should be understood as a pieces of a bigger puzzle.

Sarajeveans are invited to pick the best pieces of each project to help building their holistic vision for this outstanding landscape.

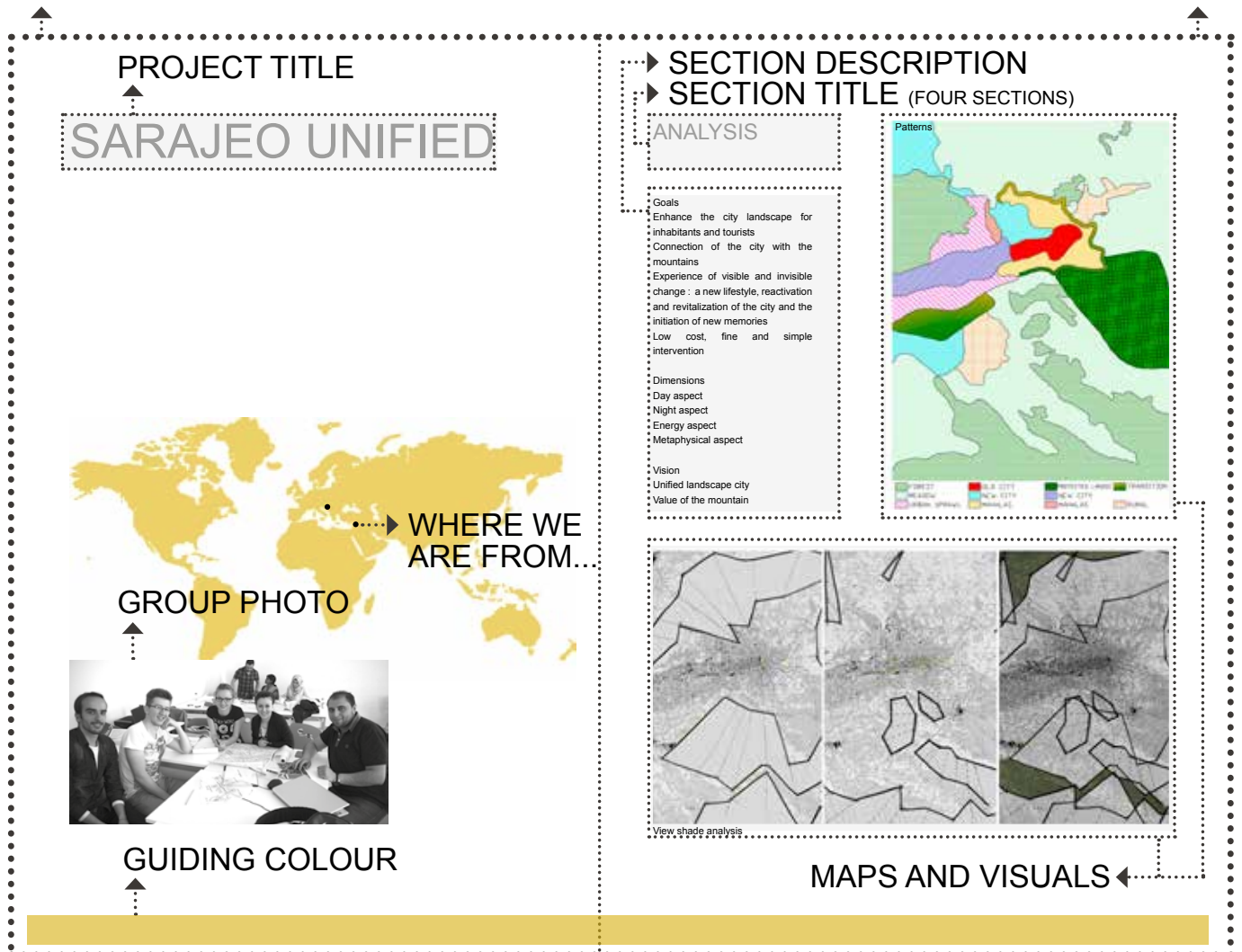
Landscape is an area as perceived by people (ELC).

STUDIO TEAM



TITLE PAGE

DOCUMENTATION PAGES



Each project starts with a title page that introduces the project team and gives a short overview about the conceptual idea. In the following pages explain and illustrate the group process in four sections. To guide you through the brochure each project has its own guiding colour that is shown at the bottom of each page .

SARAJEVO UNIFIED



Muhamed Bjelic
Amir Karabatak
Adriana Kuraja
Shérine Grandin
Abdulaziz Kaya

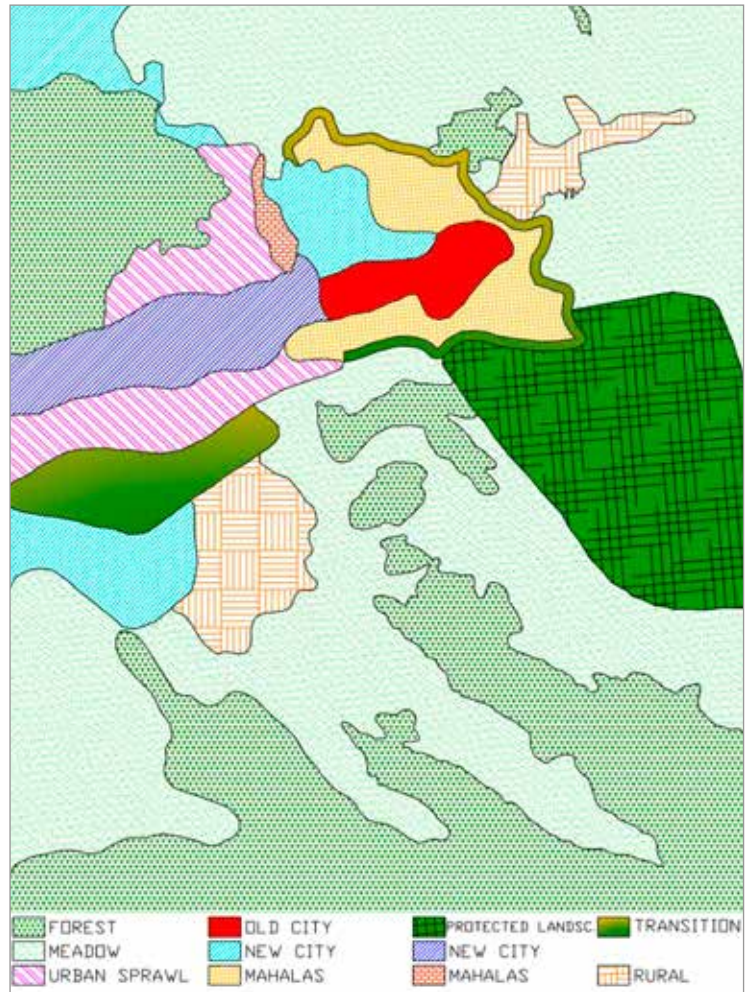
*University of Sarajevo, BiH
Burch University Sarajevo, BiH
IMLA Programme, Croatia
IMLA Programme, Syria
Burch University Sarajevo, BiH*

A LANDSCAPE OF DYNAMIC PERSPECTIVES

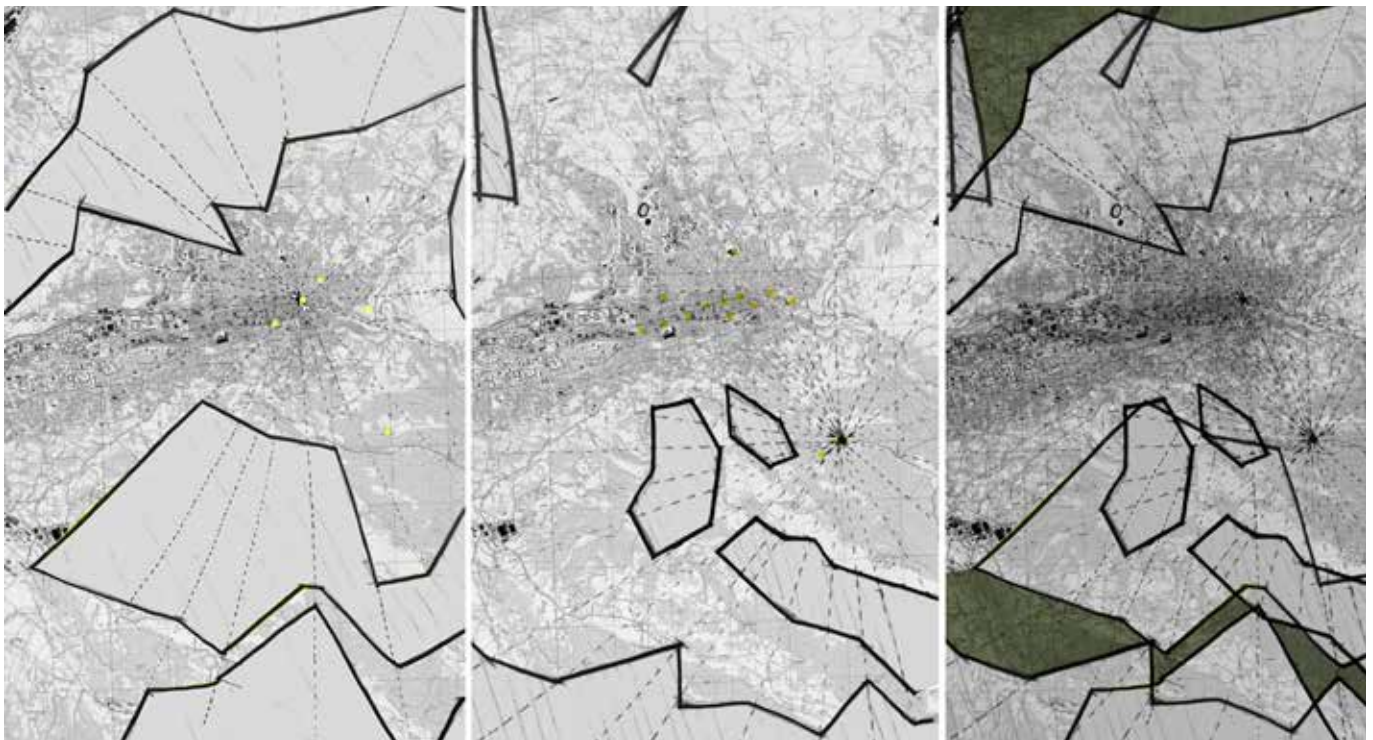
The landscape of Sarajevo is very strongly related to its topography and the continuously changing views into the territory.

During the analysis phase our group set a focus on the visual appearance of the landscape around Trebević mountain. Our team identified landmarks, patterns, topographic structures, borders, connections and limits using different methods. Our research was based on maps but we also did many site visits and observations. The viewshed analysis shows which parts of the wider landscape environment are visible depending on the position of the observer.

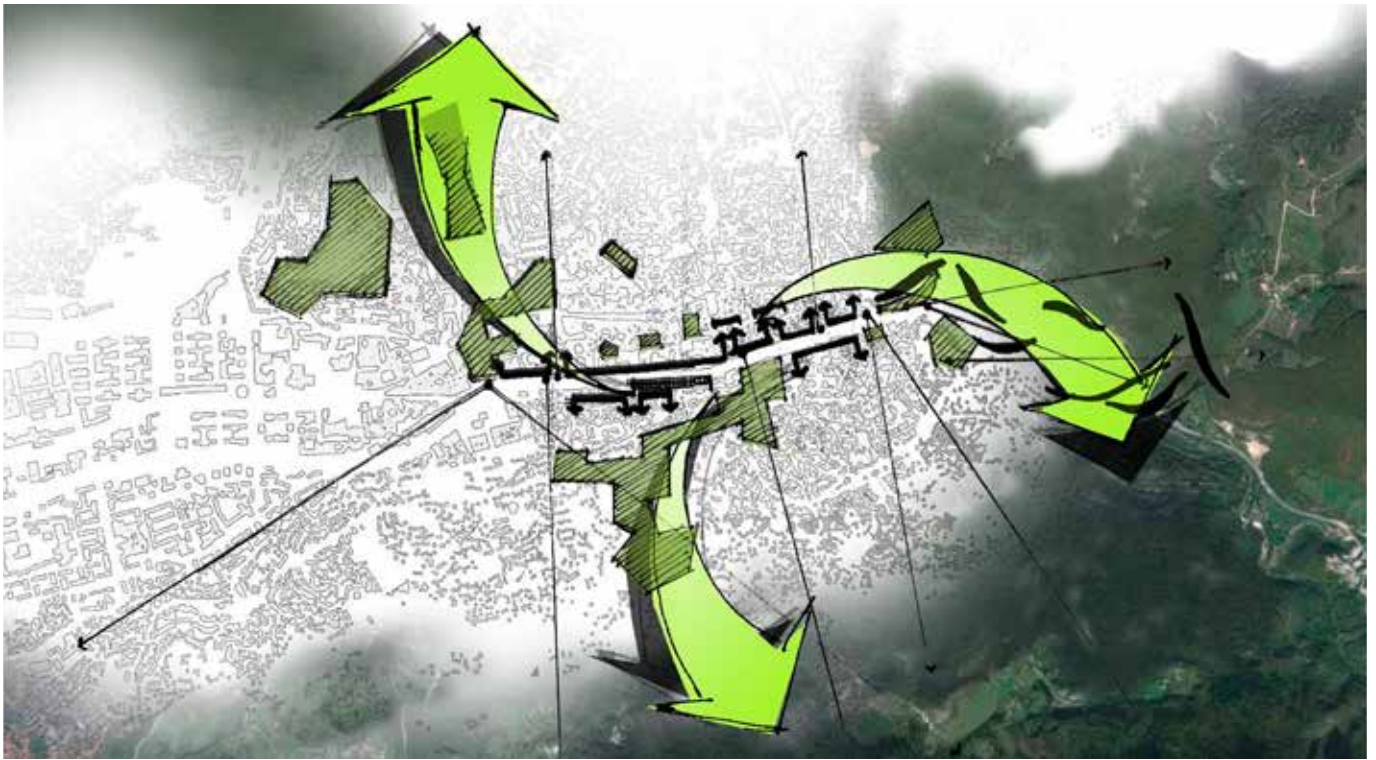
Based on these findings, we developed a concept that worked with the topography and the scenic value of the landscape, which is a unique potential.



Landscape units of the urban transition zone



Analysis of the viewshed in different directions starting from the city centre, then moving up the mountain



Green connectivity in combination with visual axes

GREEN CONNECTIVITY

The objective of this project was to improve the experience of the city by enhancing its topographical structure. In addition, the connectivity to the surrounding mountains should be improved. This is achieved by simple and low cost interventions, building on the existing landscape potential.

The project concept works with the following four dimensions: day, night, energy and the metaphysical aspect. The vision is

to see Sarajevo as a unified urban landscape that is fully aware of the value of its mountains. The concept of 'union' was inspired by circles serving as replicable modules for stepwise implementation. The following measures were then proposed for Trebević Mountain:

A panoramic pathway leads from the city to the hill. The bob sleigh is integrated in this itinerary.

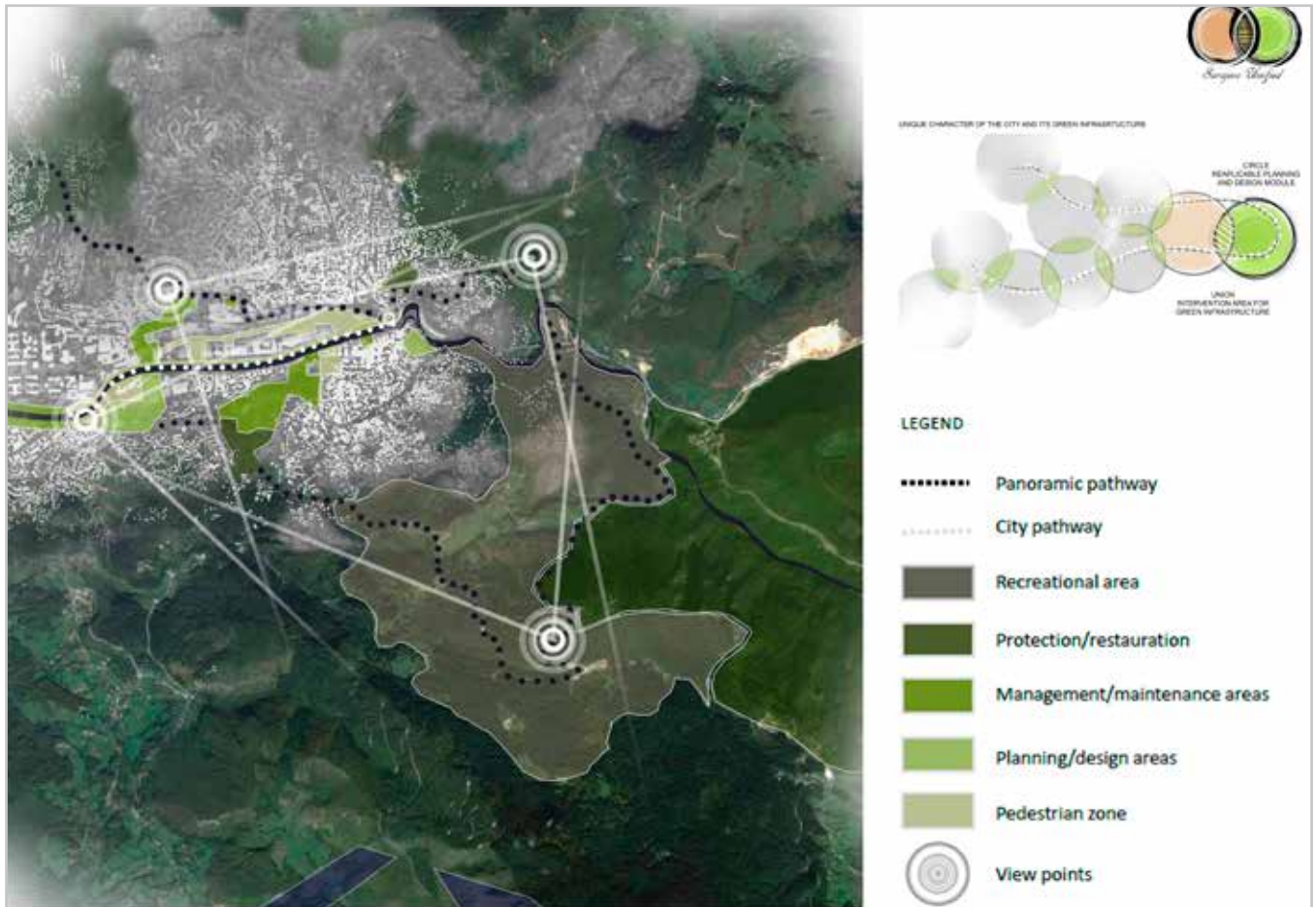
A secondary path connects different points of interest in the area so

that people can design their own route according to their interest and needs. An action park for climbing trees and a protected area are integrated for the experience of nature. The former location of the panoramic restaurant is redeveloped as a pick nick area from where the best view on Sarajevo can be enjoyed.

The interventions proposed by this project are sensitive, simple and based on small investments.

The pathways into the landscape will be marked by local interventions





Integrative master plan combining visual connectivity with recreation and nature protection

The detailed pathway design includes the bobsleigh track into a panoramic walk. The team proposed to emphasise the hill with wind power plants.



Right: people use the Bobsleigh track as pathway for a unique experience



Left: Bobsleigh track area where people meet. Nature would expand and take over the concrete ground

GOVERNANCE AND FINANCE

The project will be owned by the City of Sarajevo. The city will work with investors (restaurants, sport activities such as hiking, climbing trees, wall climbing ...). A protection framework will guide activities and define zones for different uses.

Tree selling and planting will be available in different areas of Sarajevo. Sarajevo inhabitants and tourists will have the chance to buy a tree and plant it with a signage

that indicates its name, country and year of planting. This idea aims to enhance the value of trees. People would have a strong relation with the place and money will go to the fund for maintenance.

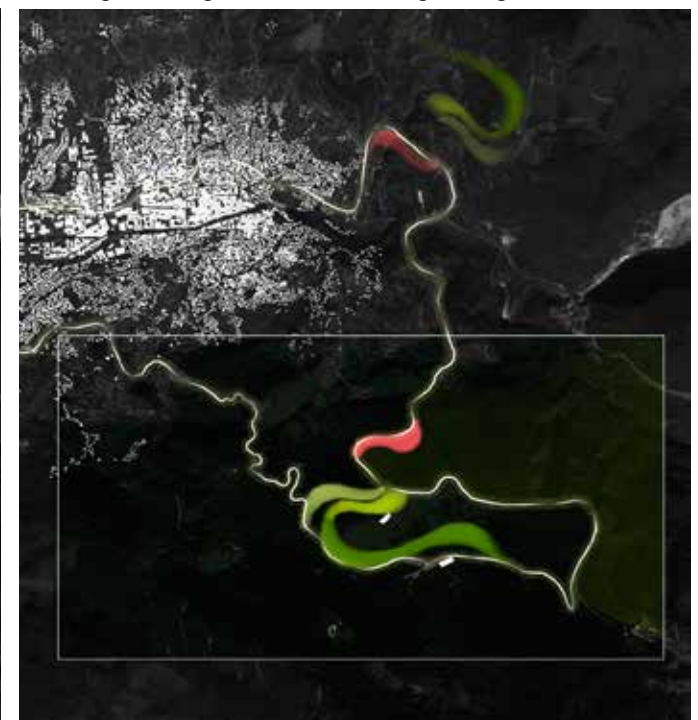
Energy used for the illumination of the path will be based on solar power lighting. Wind power stations will also be placed and used to produce energy not only for this project but also for the

city of Sarajevo. In order to know the opinion of people regarding wind mills in Sarajevo, young people, adult and elderly were asked whether there should be windmills or not and whether they should to be seen or not. All people interviewed thought that windmills will bring hope to Sarajevo and that it would reflect the development of the city of Sarajevo.

Detailing area: normal condition at night



Detailing area: light structure during the light festival





SUSTAINABLE INFRASTRUCTURE



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Mohammed Al-Khanbashi
Sergio Ribeiro

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PATTERNS OF MOVEMENT

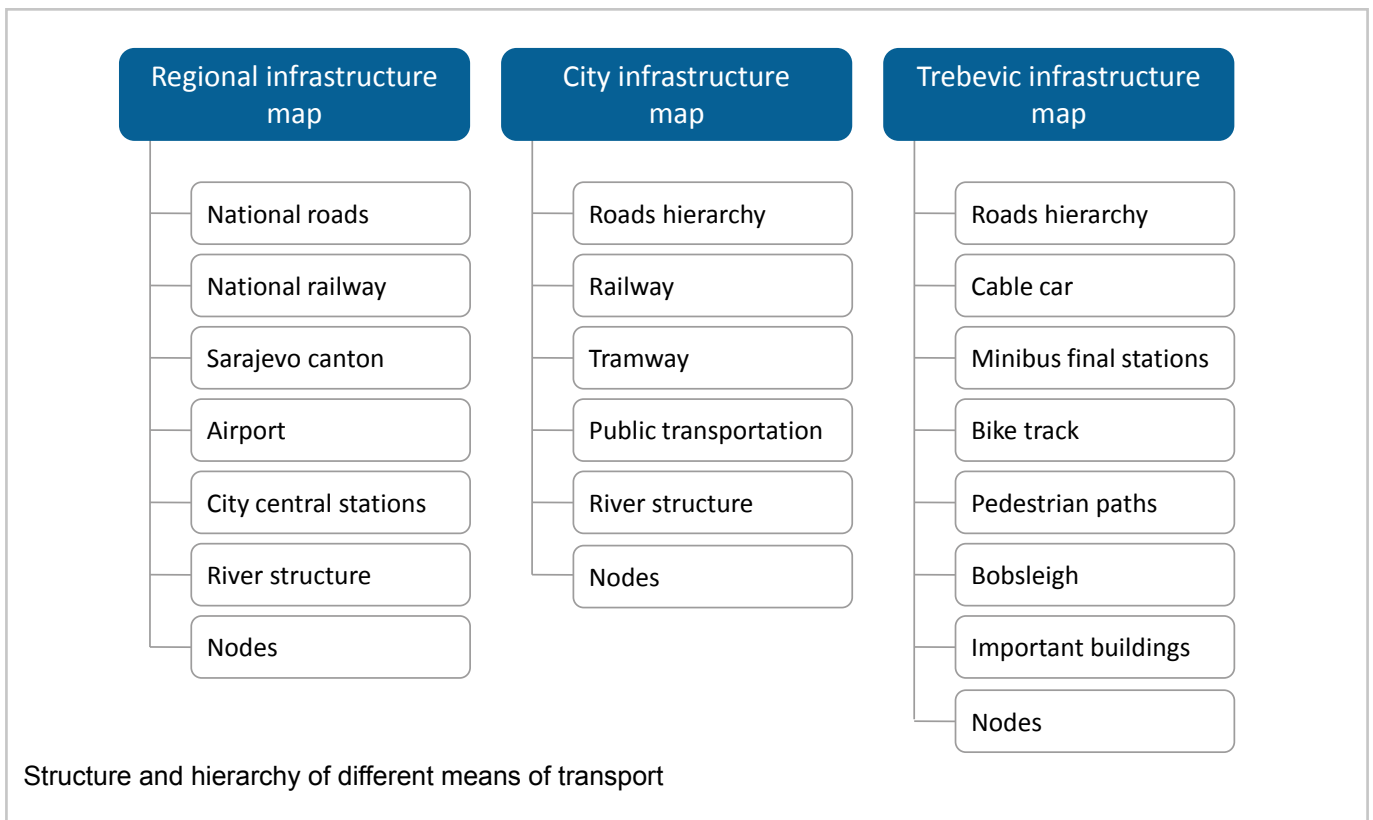
Our analysis focus theme was the traffic infrastructure and patterns of movement at three different scales: regional level, Sarajevo city level and Trebević mountain level. The aim of this multiscale analysis was to recognize and understand the existing infrastructure hierarchy and the different existing transportation modes. Therefore, each of these scales provides a deeper insight on how Trebević Mountain could be reached by different means of transport.

At regional level, the Sarajevo airport, the highway, secondary roads, the railway and the old railway converted into a hiking and bike track provide the city of Sarajevo with different gates of entrance. At a city level the topography of Sarajevo influenced

how all the infrastructure was organized in relation to the river flow along the valley. All the main roads and the tram line go mainly parallel to the river which are intercepted by transversal roads connecting the South and the North Sarajevo in a very simple system.

At the last analyzed scale, the Trebević Mountain, the focus was on how it could be possible to reach this area by car, foot, mini bus or other modes of transportation. Taking this into account it is important to mention that there are several possibilities to reach Trebević from Sarajevo old city center. By foot there are several pathways along the slope urbanization which most of the time are shared with cars and are not so safe. By public transport is possible

to reach Trebević by minibus but with a very limited schedule. There is one main road connection for cars but on weekends due to the popular Brus picnic site there are some traffic jam problems and lack of parking infrastructure.



Regional infrastructure map



City infrastructure map



Trebevic infrastructure map



Analysis Map

City public transportation map



Hierarchy of streets



Hierarchy of pedestrian paths

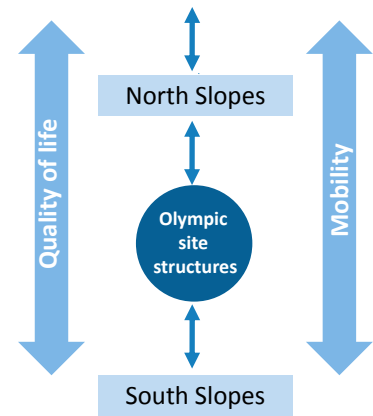


SUSTAINABLE MOBILITY

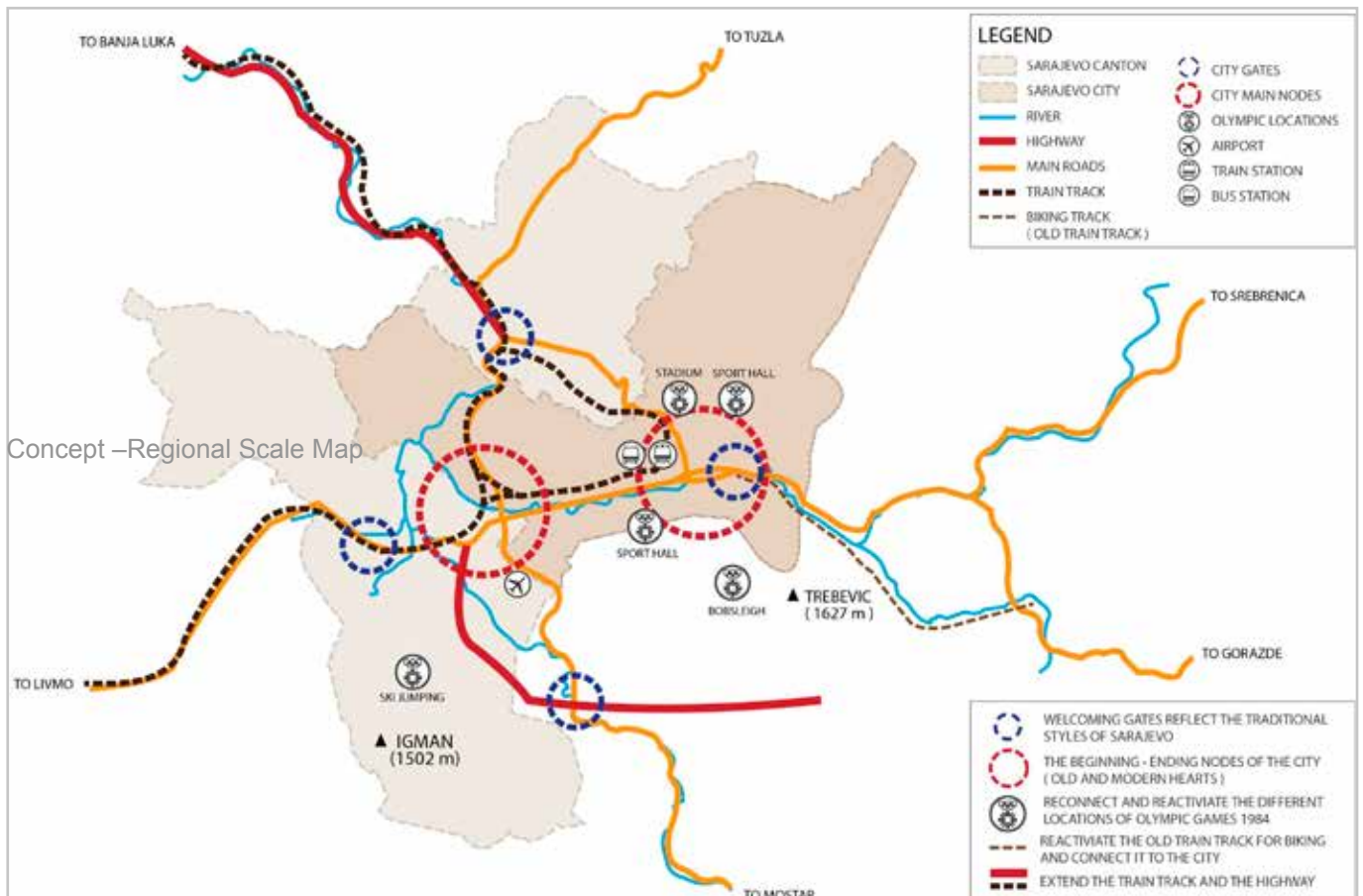
Our concept concentrated on sustainable mobility with the goal of evoking the lost Olympic spirit of Trebević and to boost its local economy. To reach this goal a holistic perspective was required, looking beyond the cantonal borders to the entire Trebević landscape including the southern slopes and all the villages. Accordingly to the three scales of thematic analysis, the guiding concept followed the same multiscale approach with the goal of developing a multimodal transportation system.

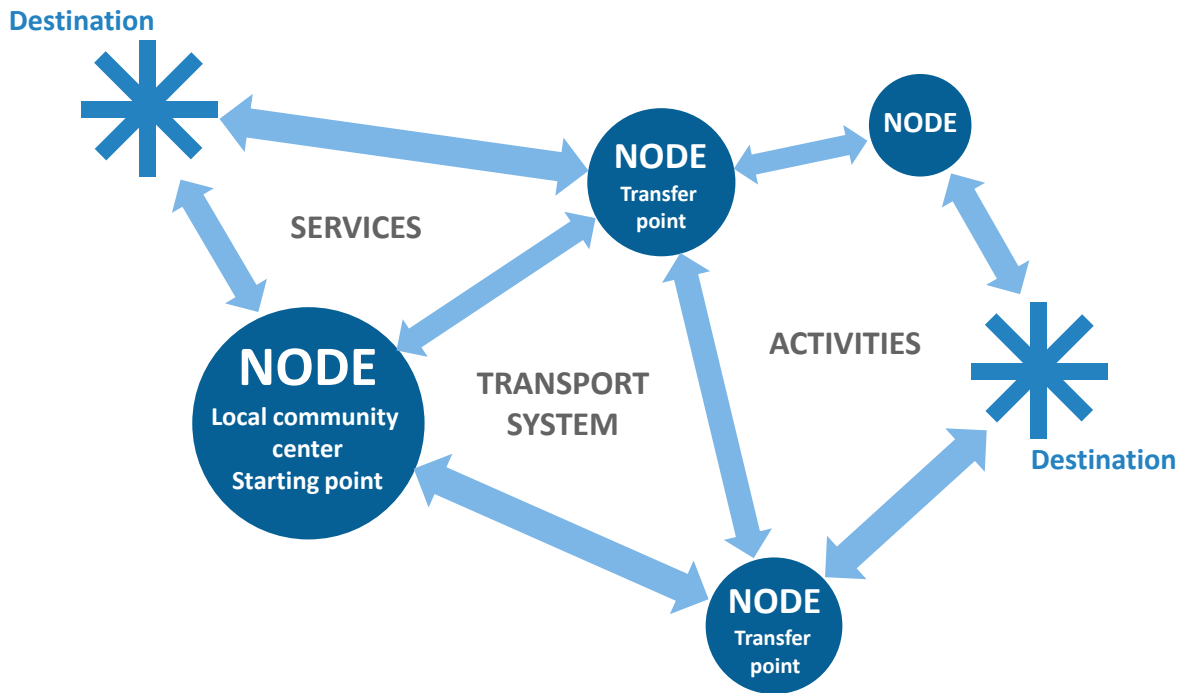
This system is combined with a strategic reactivation of a multitude of different services and activities. Most of these activities and services

already exist but need to be developed and become part of this integrated mobility node system. These different nodes represented on the maps point out local community centers, transportation transfer points and some final destinations and landmarks. The main goal of this routes node system is to provide Trebević with a multifunctional landscape boosting its local economy and reviving the lost Olympic spirit of the past with the new Youth Olympic Games of 2017, increasing a low impact tourism and at the same time erasing the psychological barriers associated to Trebević after the war in a long term perspective.



Vision and Strategy_North





A MULTINODAL SYSTEM

The node system consists of main focal points/nodes and secondary nodes. These main nodes are representing either the starting points for different modes and new local community centers or transport or landmarks on Trebević where it will be possible to find different facilities or simply transfer points.

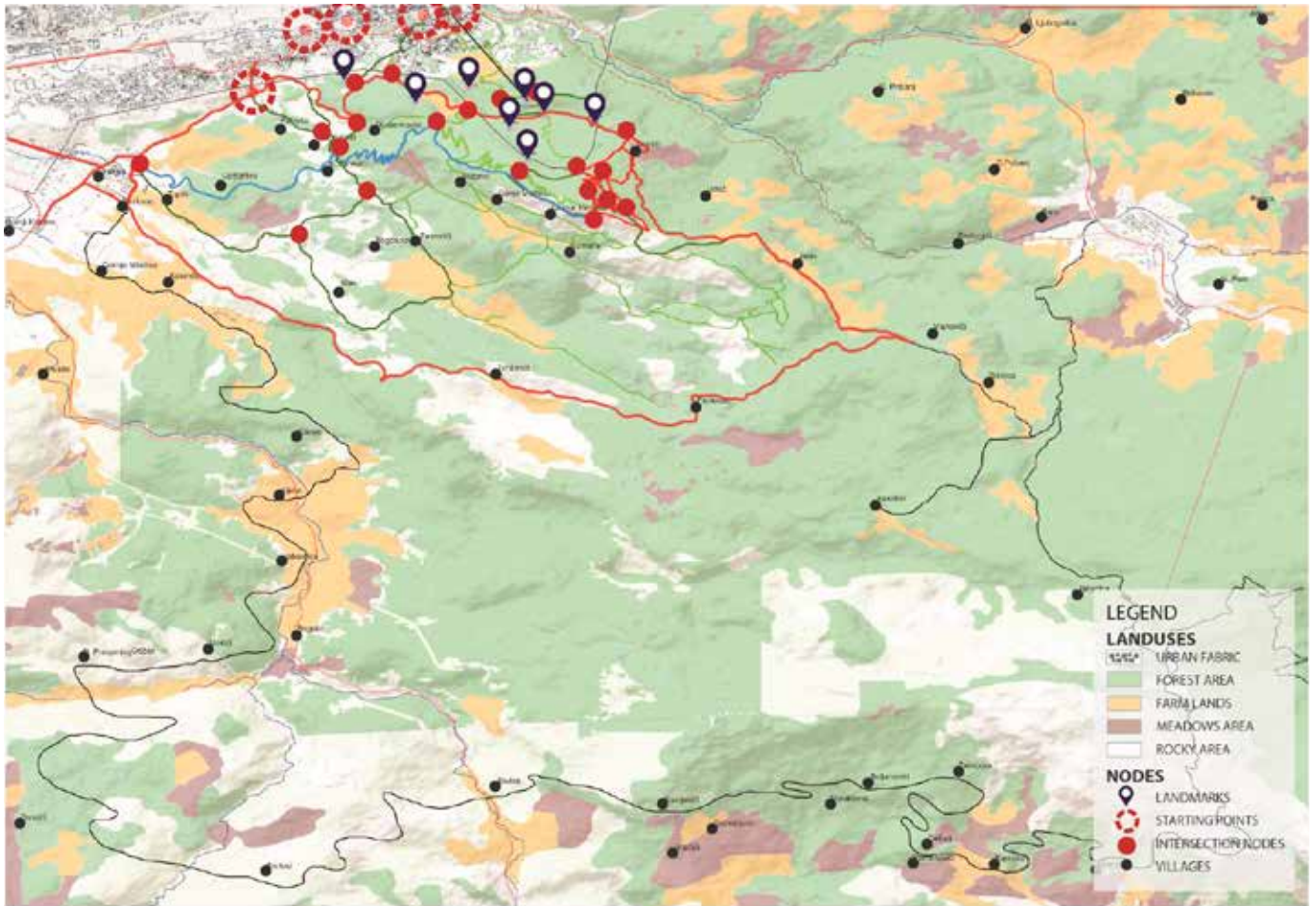
The starting points include:

1. Vraca: the main entry point used for minibus, bikes and electric cars will also provide underground garage, restaurant, stores, car/bike sharing service information center etc.
2. Wilson's promenade: it will serve as continuation of the biking route that is already there on the promenade.

3. Skenderija: will be used as starting point for minibus, bikes and electric cars and bikes and there will be car/bike sharing service as well.
4. Austrian Square: will serve as starting point for bikers and pedestrians
5. Cable car starting point: this node will be used as already existing but rebuilt starting point of the cable car that goes all the way to Panoramic restaurant.

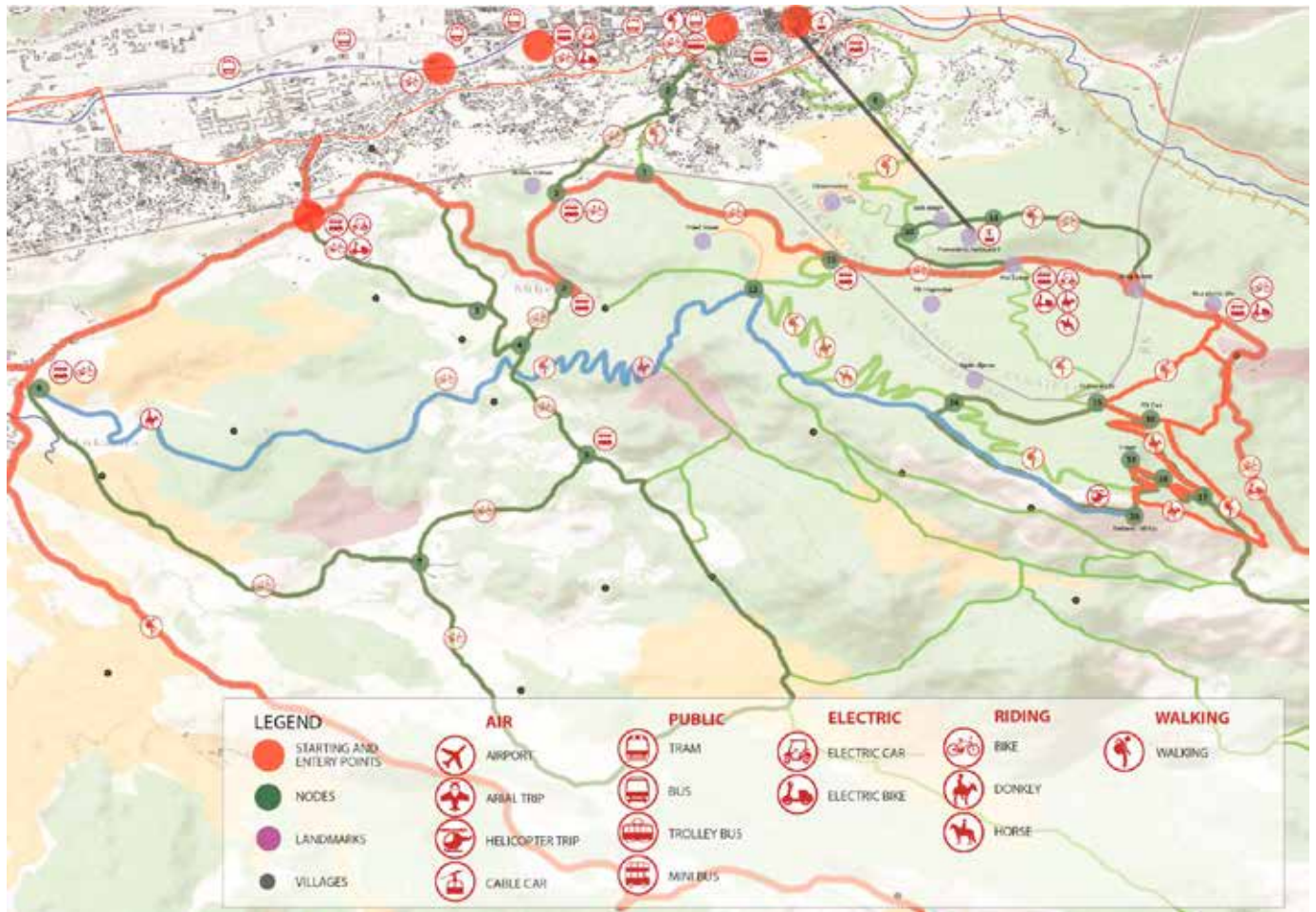
Other important nodes are: Prvi Šumar, Panoramic restaurant, top of Trebević at 1609m, Drugi Šumar and Brus picnic site. There are many more nodes marked either with numbers or names that can be seen on the map but they will mostly serve as transfer and information points.

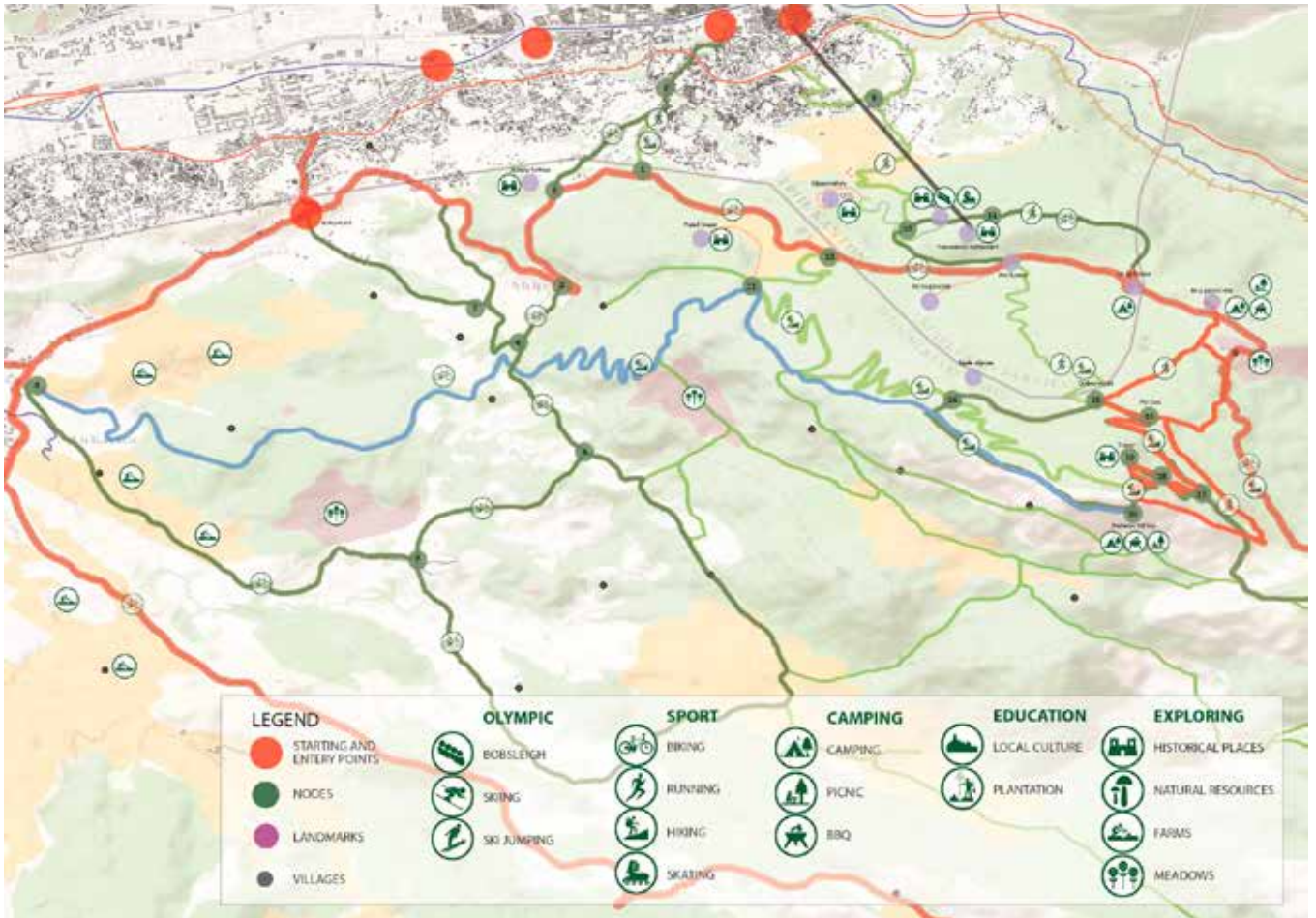
Between these nodes a grid of routes has been formed depending on the slopes of the terrain so we have minibus, electric cars and bikes, biking, hiking, donkey and horse riding routes.



City, Trebević and Villages Connection Map

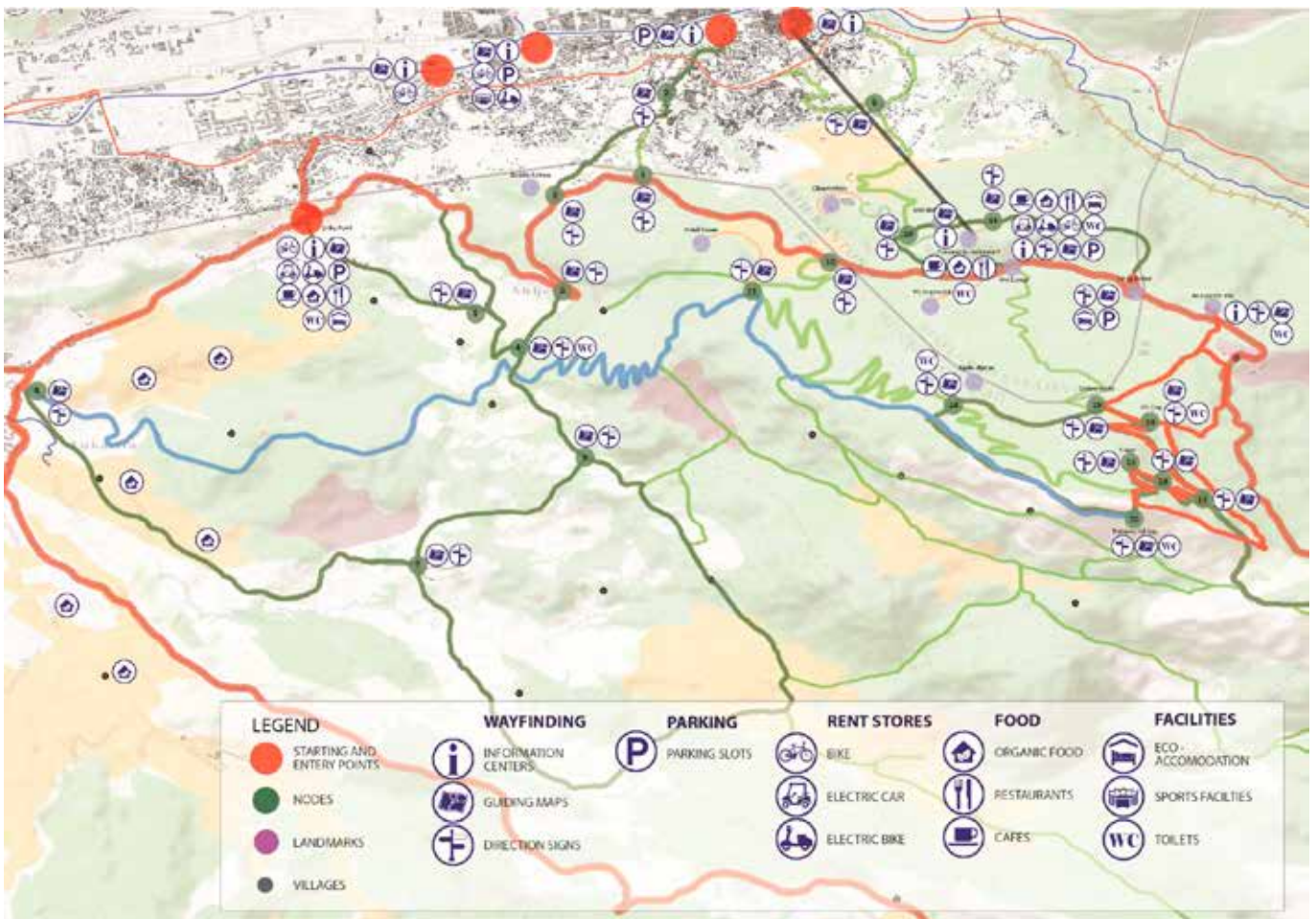
Transportation Map





Activities Map

Services Map



GOVERNANCE AND FINANCE

Regarding the finance and governance, our main concept in order to recover Trebević Mountain is to put the protection of natural and cultural heritage under the state government while the management should be controlled by the community where the heritage is located. In this way Trebević, and many other areas that are divided by entity borders, can be functioning properly and without any restrictions from each side. Once this status is achieved we can think of financing the whole project as one unit. Initial investments will be required

to establish the starting points and local community centers as well as investments in all transportation modes like minibuses, bikes, electric cars, bikes and cable car that is probably in the worst condition and requires additional 4 million KM of investment to be functioning again.

Therefore our financial plan needs four different levels:

1. EU funds and state government;
2. Partnership between public and private units;
3. NGOs that will operate on

Trebević in relation to services, maintenance and protection;
 4. Tax income from Sarajevo canton and city of East Sarajevo that will be used for project maintenance.



Roads Profile



ALONG THE HISTORICAL LINES



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A CITY EVOLVES TOWARDS ITS MOUNTAIN

Trebević mountain along with the city of Sarajevo went through a series of historical phases. The city began to grow towards Trebević mountain in the 15th century and its landscape changed many times since. Our basic historical analysis shows the pattern of land use and landscape through different periods. In this way the elements of cityscape such as street patterns, streams, gardens and building types were traced through history.

In the Ottoman period it is noticeable that the city concentrated around river Miljacka but already scattering over the slopes of the surrounding mountains including Trebević. These scattered settlements were in the form of sets of housing units

with a common focal point, defined as *mahalas*. The forests in the higher parts of mountain Trebević were cut down and left the mountain almost deforested.

The Austro-Hungarian period brought more structure. The organic *mahalas* were now expanded with planned buildings and infrastructure. The city started to grow in a linear direction to the West but also onto the slopes. The landscape also improved. The Austro-Hungarian administration ordered the aforestation of the mountain and brought it to its previous state, yet with different species. During the early 1900s Trebević mountain became a place of recreation and tourist attraction.

The introduction of the cable car to the hilltop cafe in the 1950's brought a lot of change in the lifestyle of people in Sarajevo. In 1984, the Olympic Games made Trebević mountain a place of importance with international recognition. During the Bosnian war Trebević was used as a strategic position and frontline.



LEARNING FROM THE PAST

The elements considered for the concept are derived from the historical analysis. What can be learned from the past in order to achieve landscape integration between the core city of Sarajevo and Trebević mountain? The concept suggests a zoning of the territory into different urban landscape types.

These typologies result from the analysis of historical maps which reveal the structure and locations of settlement patterns, gardens, orchards, small woodlands and water structures. Our guiding idea is an urbanistic sprawl rejuvenation with the implementation of green, water and horticulture elements in parallel with counteracting the worst case scenario.'

Green connections throughout the city are the most important elements to be considered from the historical period till now in a contemporary way. These connections will restrict the urban sprawl naturally from eating up all the green through the city. The inclusion of green inter nodes along many roads which lead to the nature or green in the city leading to the Trebevic mountain Controlled expansion of settlements with retained open spaces - this could be a form of modern mahalas with cotemporary style and restrictions on building heights to maintain the visual connectivity to the mountain.

Resurfacing the two main rivers which are hidden today. This could include either a part of the rivers as a symbol of history or bringing the whole river back by reorientation of

traffic. Creating buffer zone around the protected area of the mountain Different phases of development areas with green zones in urban and scattered smaller mahalas in the flat topographical lines with farm lands. Thus reflecting history and counter acting the worst case scenario.



GOVERNANCE AND FINANCE

The following guidelines could shape a governance approach for our implementing our idea:

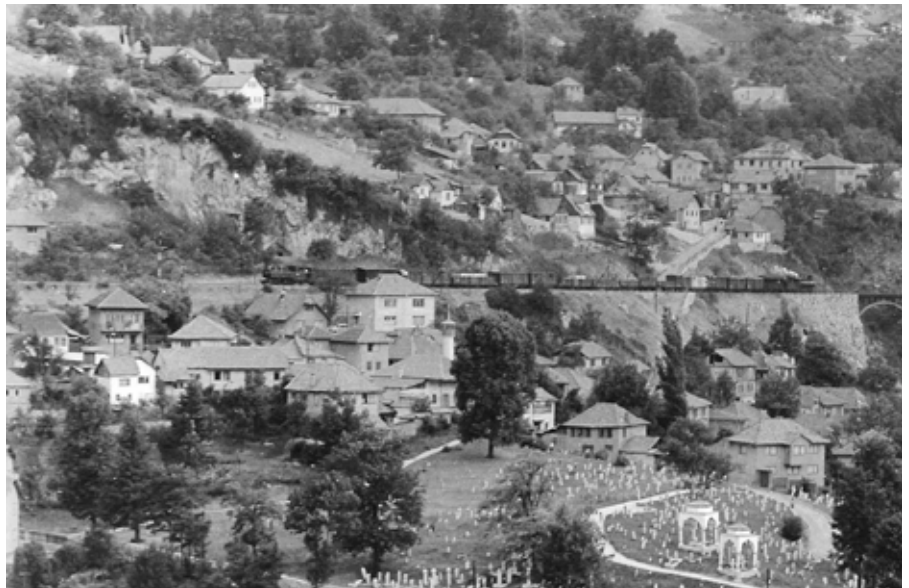
- More strict legislation to avoid further increase of unauthorized buildings
- Clear policy for preserving water, green and forest areas in the urban context
- Plotting and registration of urban/rural development areas
- Policy arguments need to be accompanied by proper negotiation with different stakeholders
- Traffic reorientation

We propose the following ideas for supporting the financial sustainability of our approach:

- Maintenance of green areas with community participation, as urban gardens and public open space/community space
- Possibly design a project for EU co-funding to reestablish the historical water streams
- Planting internodes- local universities and nurseries
- Tax income from anticipated tourism and increased life quality standard

The worst case scenario would be a continuation of the current trend of unplanned and unorganized urban sprawl with more fragmentation of urban and rural green.

It is important to act against this trend. Newly planned urban and rural developments should build on the historical context in a contemporary way. Blue-green connections are the starting points.



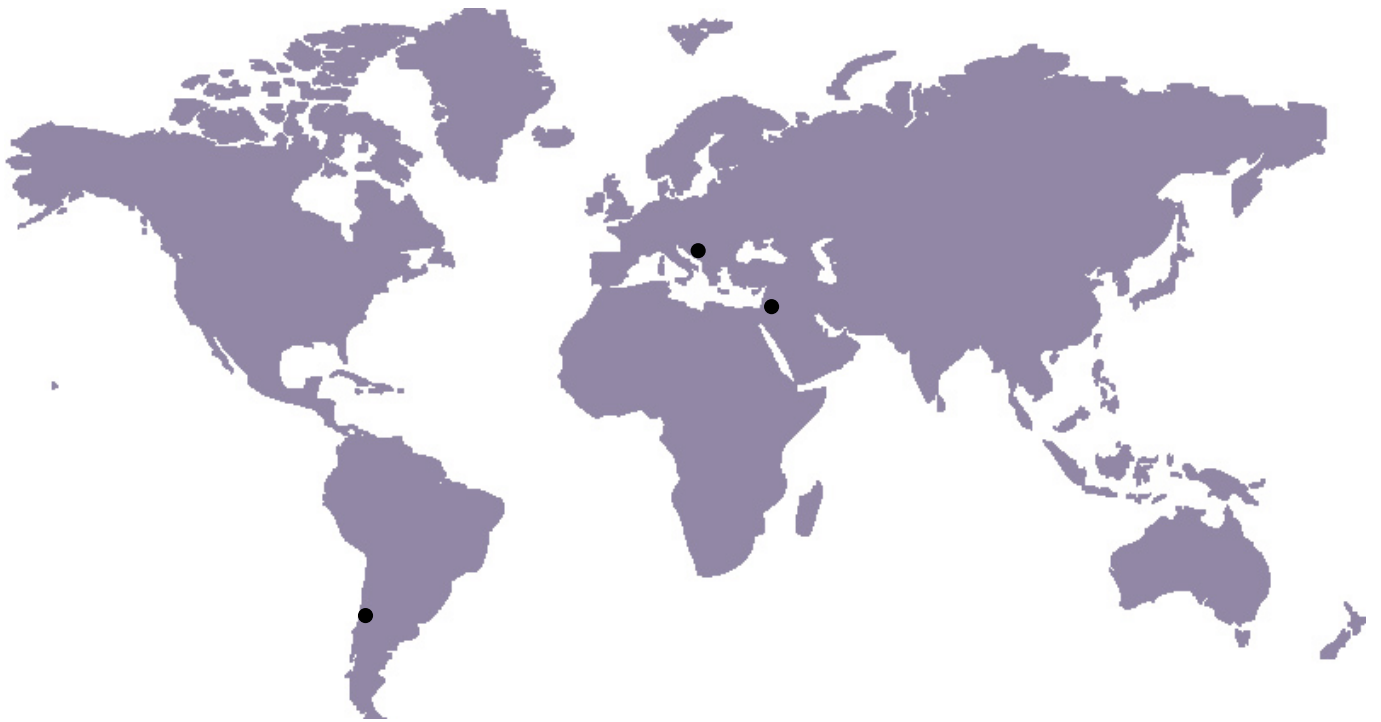
Bosnische Ostbahn (Bosnian East Railway) at Sarajevo Bistrik, own image of Dr. E. Scherer (Mediawiki, Creative Commons). The image shows the huge amount of green space and gardens in the Bistrik quarter. The image was taken on 03.08.1964.



Gardens and cemeteries are important elements of the green connectivity that needs to be preserved and enhanced. Images taken by Esra Al Najjar in June 2015 on a walk in Cicin Han, on of the quarters at the northern slope of Trebevic.



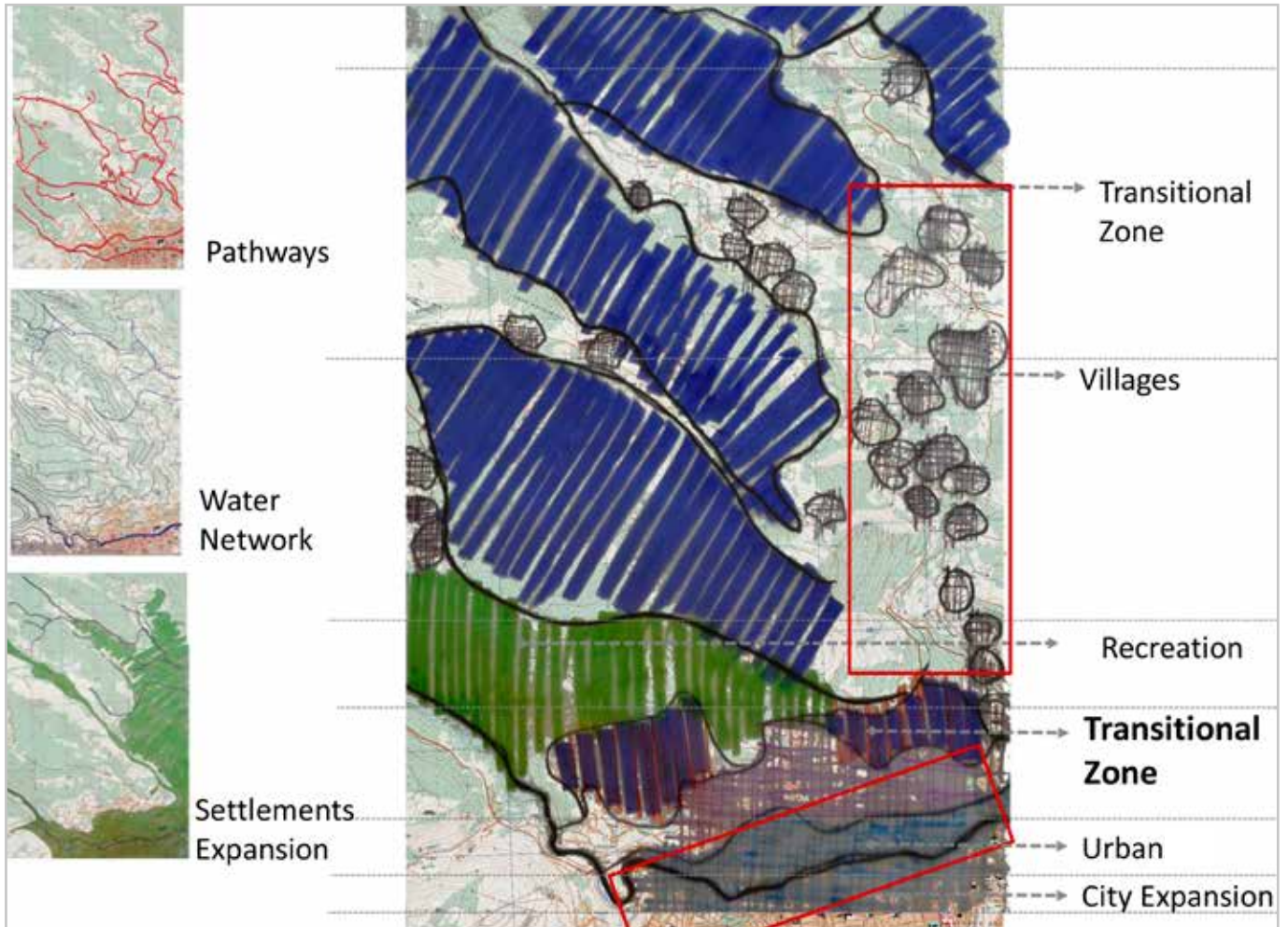
STARTING FROM THE CELL OF COMMUNITY



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Leslie Iturra
Esra Najjar
Serdar Ozer

Burch University Sarajevo, BiH
IMLA Programme, Chile
IMLA Programme, Jordan
Burch University Sarajevo, BiH

PATTERNS OF TRANSITION



Spatial analysis of the transition zone. Base map used in this project: Sarajevo, Sheet 2 1:12,500, Edition 7-NIMA, Series M903, National Imagery and Mapping Agency, 1997, retrieved from Texas University Library

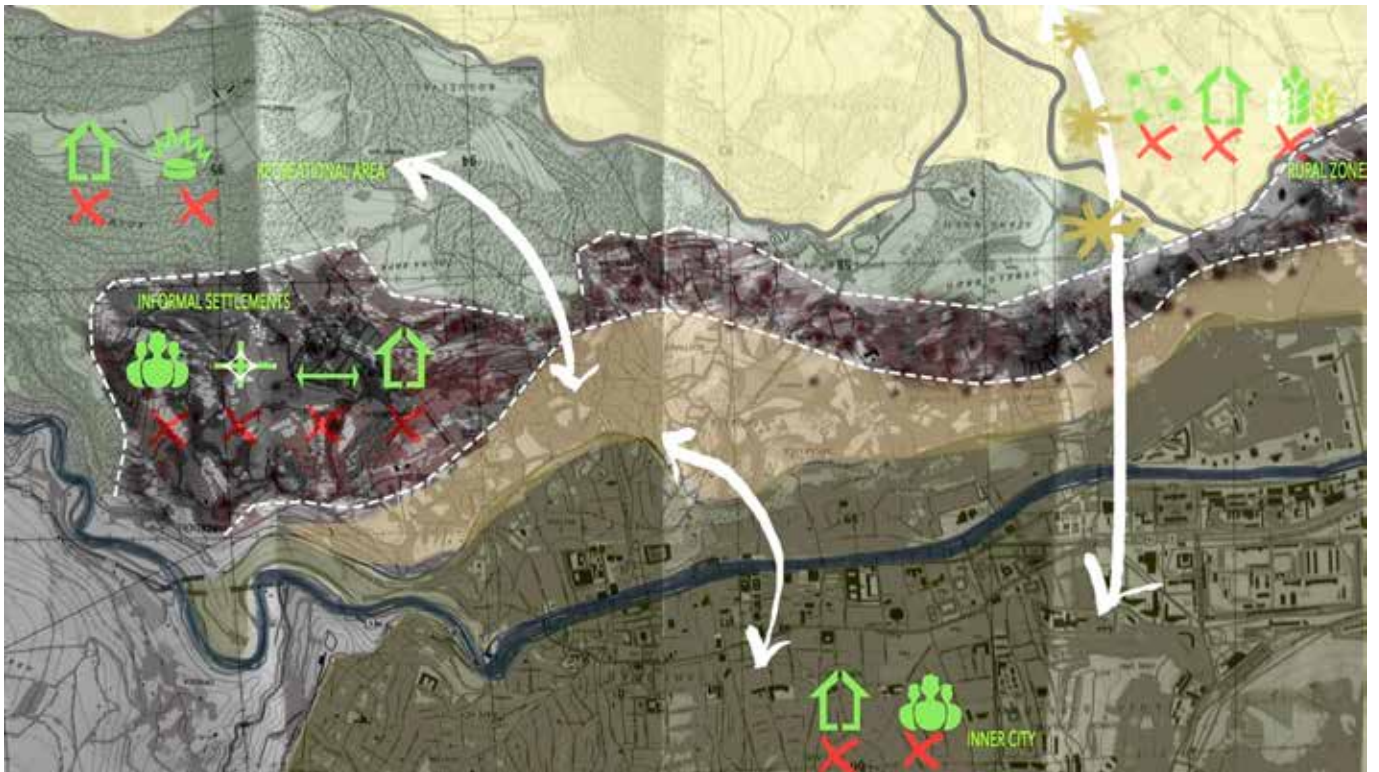
In these maps you can see the review of our general analysis. We examined pathways, water network and settlement expansion. The built structure is clearly determined by the mountains and the water streams. According to this analysis we proposed a general zoning. Our focus was on the transition zone between urban areas and mountain. In the next map we have marked all problems that we could recognize and which will influence our further process.

In the upper area on the mountain we find former recreational zones but they are abandoned and there is still some danger of land mines, even if this problem has been largely solved.

The informal settlements are expanding and climbing up to the mountain. We face the problem of unorganized neighborhoods with lack of common social areas. Another issue that we had to address is the connection from the

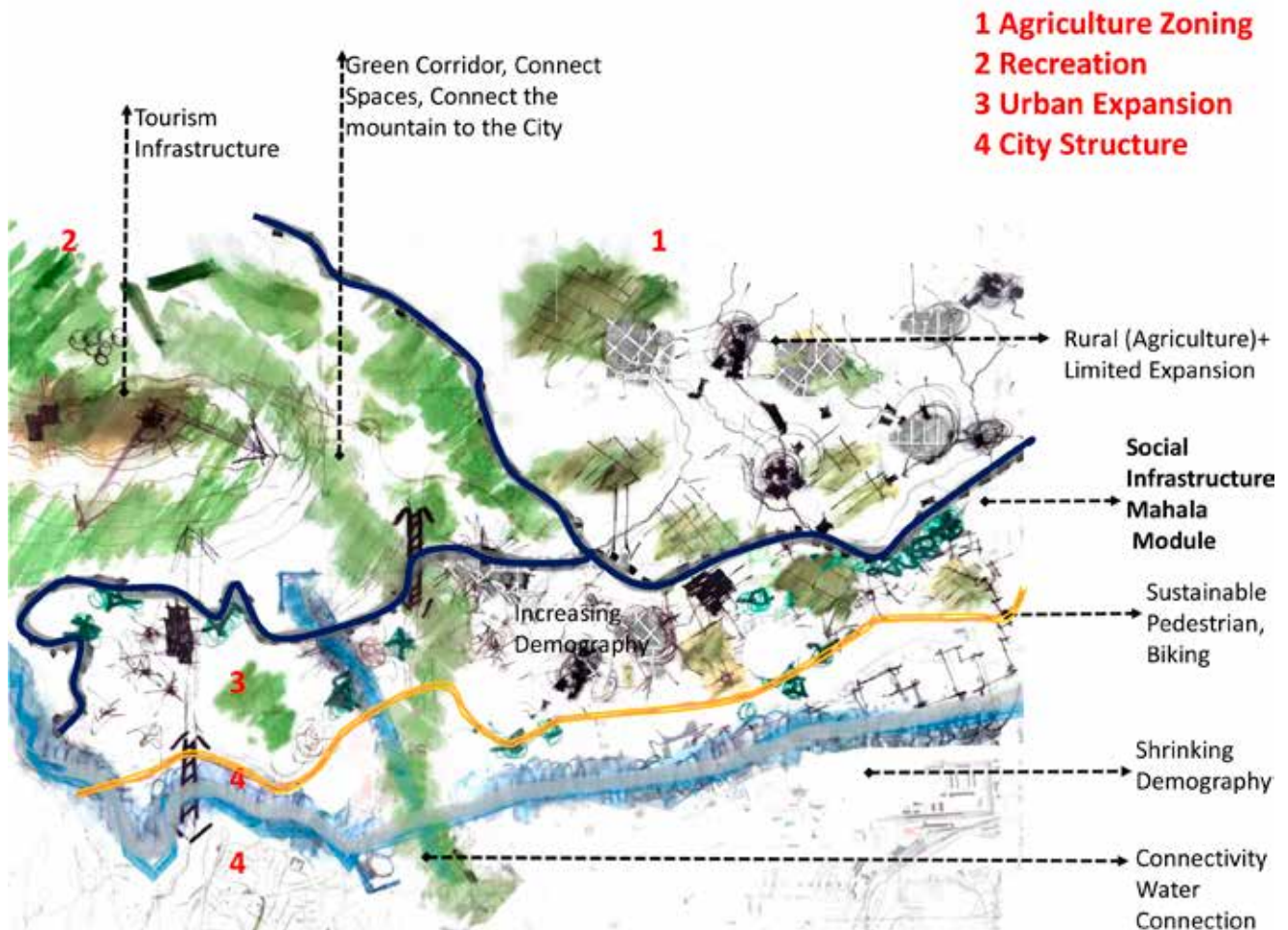
rural zone to the inner city and vice versa. The rural zones are lacking identity as a unique structure, they are partly abandoned and there is no visible strategy for urban/peri-urban agriculture.

The core city on the valley has a traditional pattern and a lot of built heritage. There are not many green spaces in the city centre. However, the landscape is very present in a visual way.



This map shows the problems of the transition zone. These are: missing connections, informal settlements, lack of social infrastructure and the existence of abandoned infrastructure in the former recreational zones up on the hill. Most map orientations in this project are upside down, northern direction is downwards.

This map shows all strategic objectives. The mahala module is part of a wider strategy.



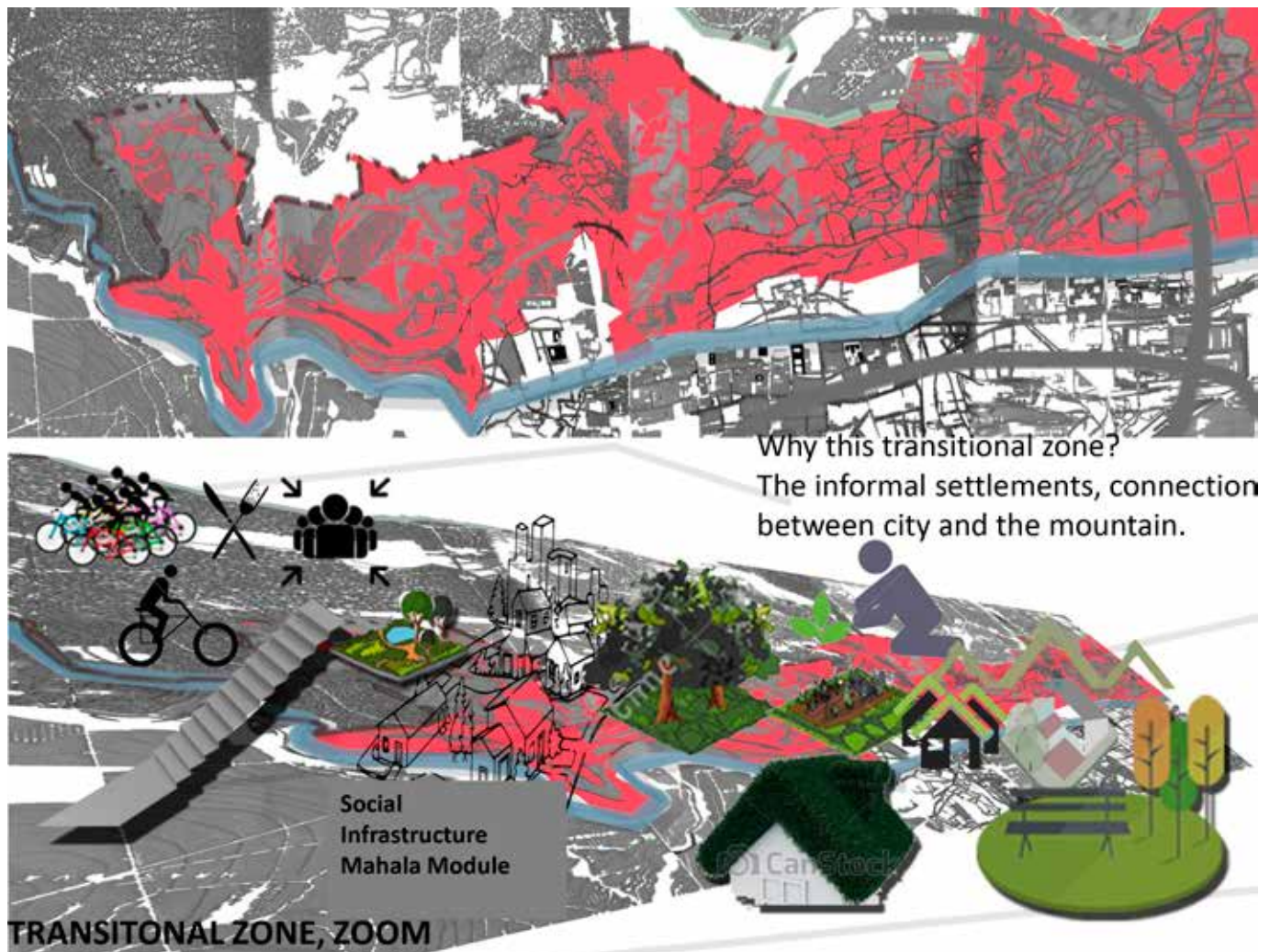
THE MAHALA MODULE

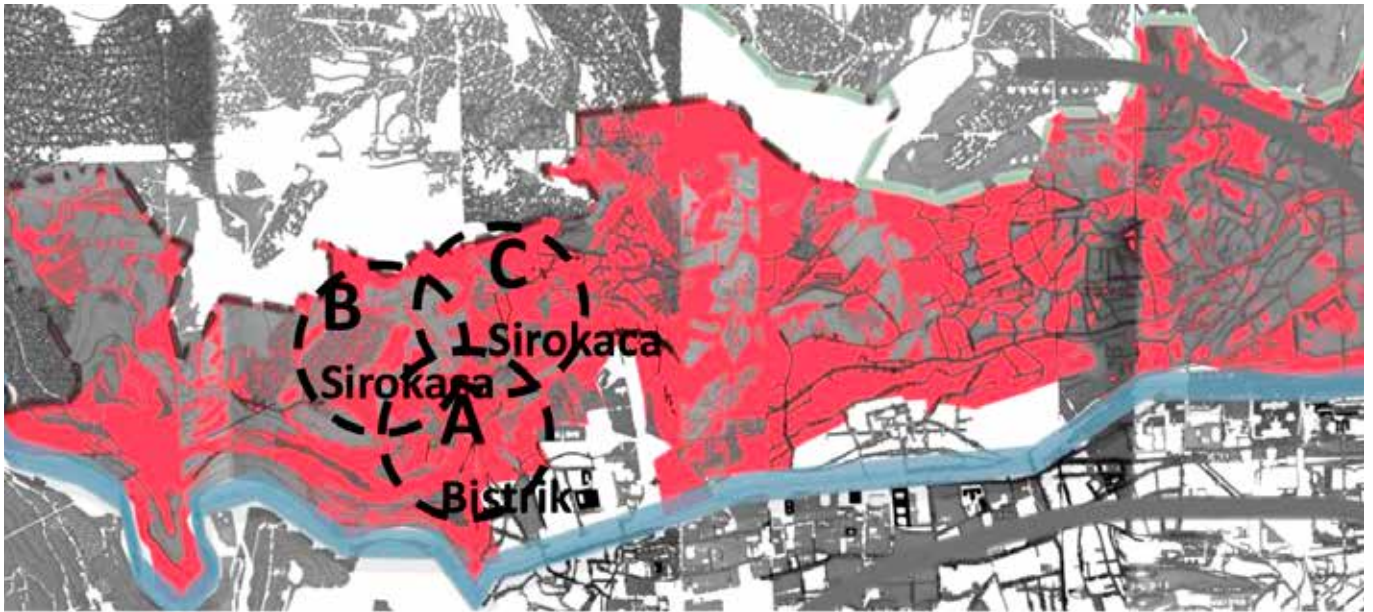
Our guiding line was the reinterpretation of the cell of community. What does cell of community mean? In our case it was the *mahala*. *Mahala* is a neighborhood unit in the contemporary sense. It consisted of a mosque, a cemetery, a fountain, a divinity school, a green grocery, a bakery, tea/coffee places and forty to fifty houses.

Beside these physical elements of the *mahala*, there were also other intangible goods and some unwritten rules, like the right of view. In the picture below you can see the transitional zone of informal settlements between city and mountain. This is the area where we applied our reinterpreted *mahalas*.

Why did we choose this area? Because we saw a huge potential and many ways how we could connect city and mountain through these informal settlements using local tools and patterns. We tried to apply the module of *mahala* in our three laboratory-zones. In each zone we focused on different values of the *mahala* and tried to reinterpret them according to contemporary and local needs.

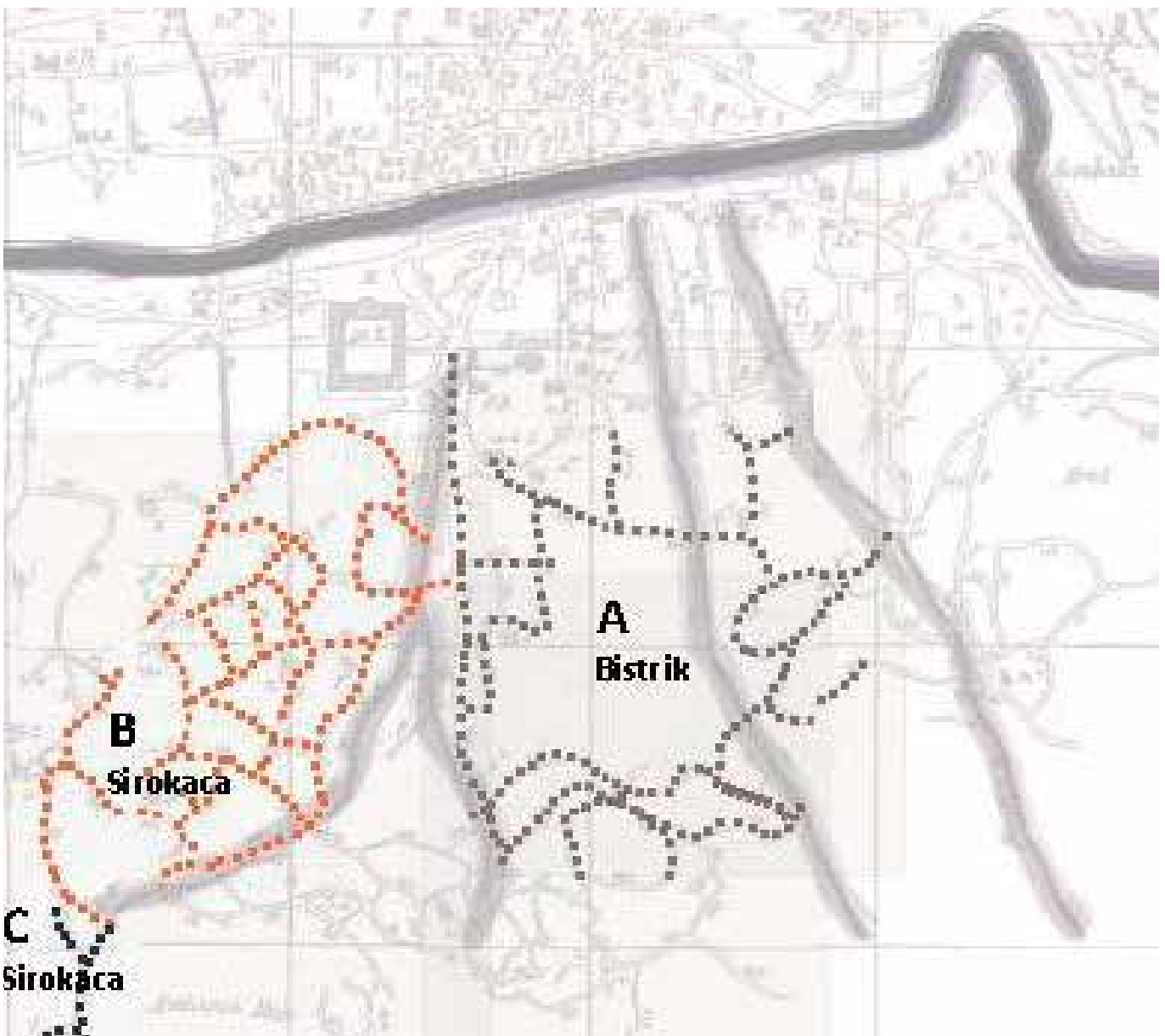
In zone A we focused on the city structure and public places that are more connected to the urban context. Zone B emphasizes inner gardens and gathering points and zone C is characterized by the agricultural relationship between inhabitants and the mountain area.





Wider context of zones A, B & C

Zones A, B and C in Bistrika area



THE MODULE IN PRACTICE

Our proposal for zone A was to create urban public spaces for activities of the locals, using any abandoned space or just intersticed areas in between. We also want to use these spaces to connect the city with its nature and the mountain. One way to achieve this bond (the connectivity) is by enhancing

sustainable transport. We propose a bike connection along the main road crossing the district, which is the former Bistrik railway line and thus very even and suitable for bikes. Another way to perform this connection would be by water elements. People are always attracted by water as it has been an

urban element from the beginning, a ritual, and naturally they would follow up these changes in the landscape. In this dense and urban area people have a huge need for public space, where they could perform their community activities and strengthen social bonds.

Zone A: Proposal and visualisations



Enhance the Sustainable/ bike connection

Connect through water elements

View Point and public space



CURRENT SITUATION



PROPOSED SITUATION



Our proposal for zone B was to enhance the usage of greenery and inner gardens, to create small scale cultivation and urban gardening close to the mosque, which in some aspect will improve the image of what *mahala* means, a neighborhood around a mosque that has many different social

activities. For some slope areas, we propose stepped gardens, which will allow easy maintenance and flexibility. Another issue that we tried to solve regarding zone B was the connection between neighboring units. We proposed sustainable walkways and stairs connection.



Small Scale Cultivation and urban gardening

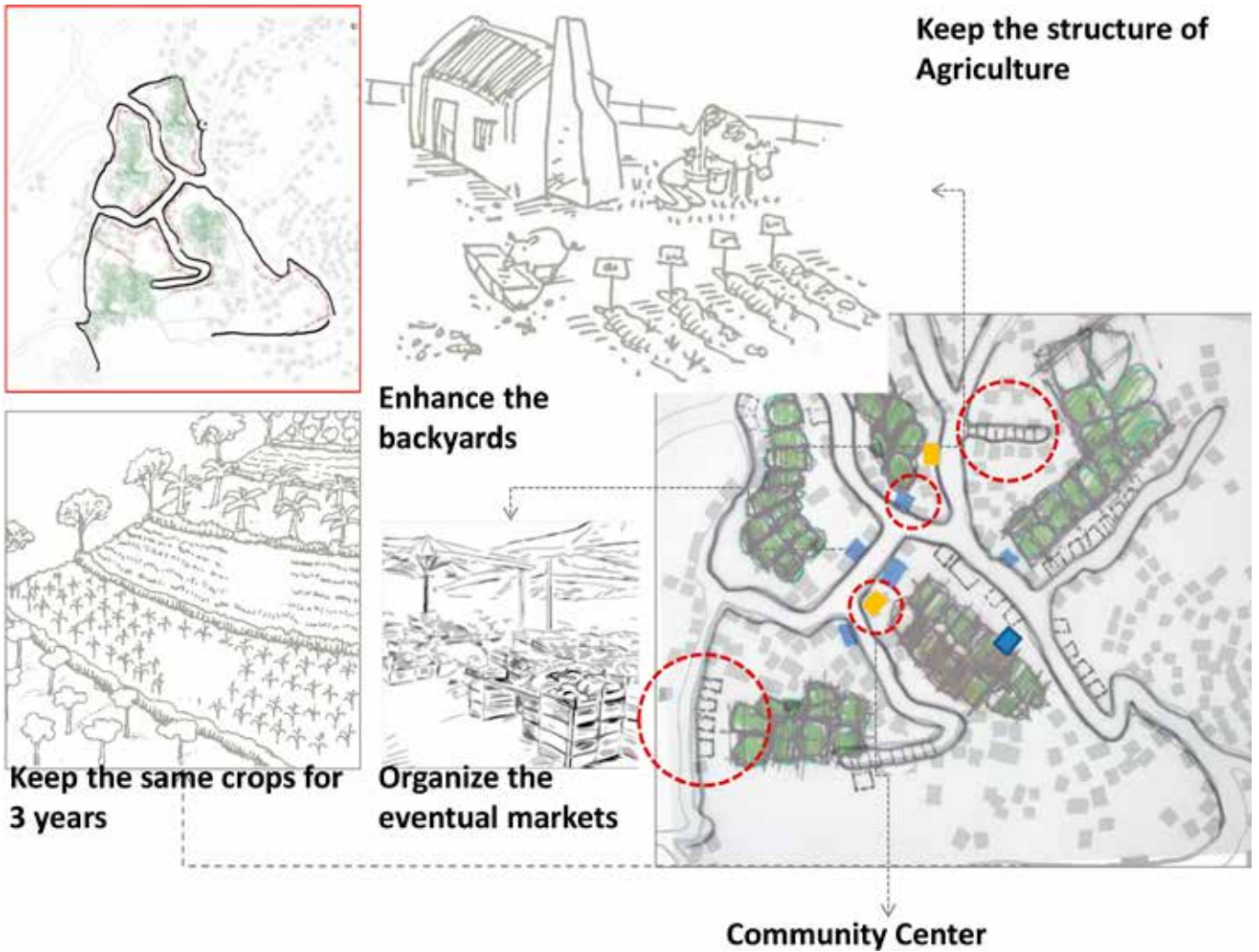


Stairs Connection and Sustainable Walkways



The proposal for zone C is to create an agricultural community. We suggest a cooperative framework for farmers to organise production and local distribution. A significant part of the people in this zone should be involved in agricultural activities. We also propose that every farmer must keep the same

crops for three years, and in that way, the farming would be more strategic. In order to support people to live and work in these areas we need to provide some additional facilities like health services, common social areas, community and market centers.



GOVERNANCE AND FINANCE

URBANIZATION



MATH EQUATION

0,5 ha



MIDDLE CLASS



SOCIAL HOUSING



FRAME

SPLIT TASKS



EU

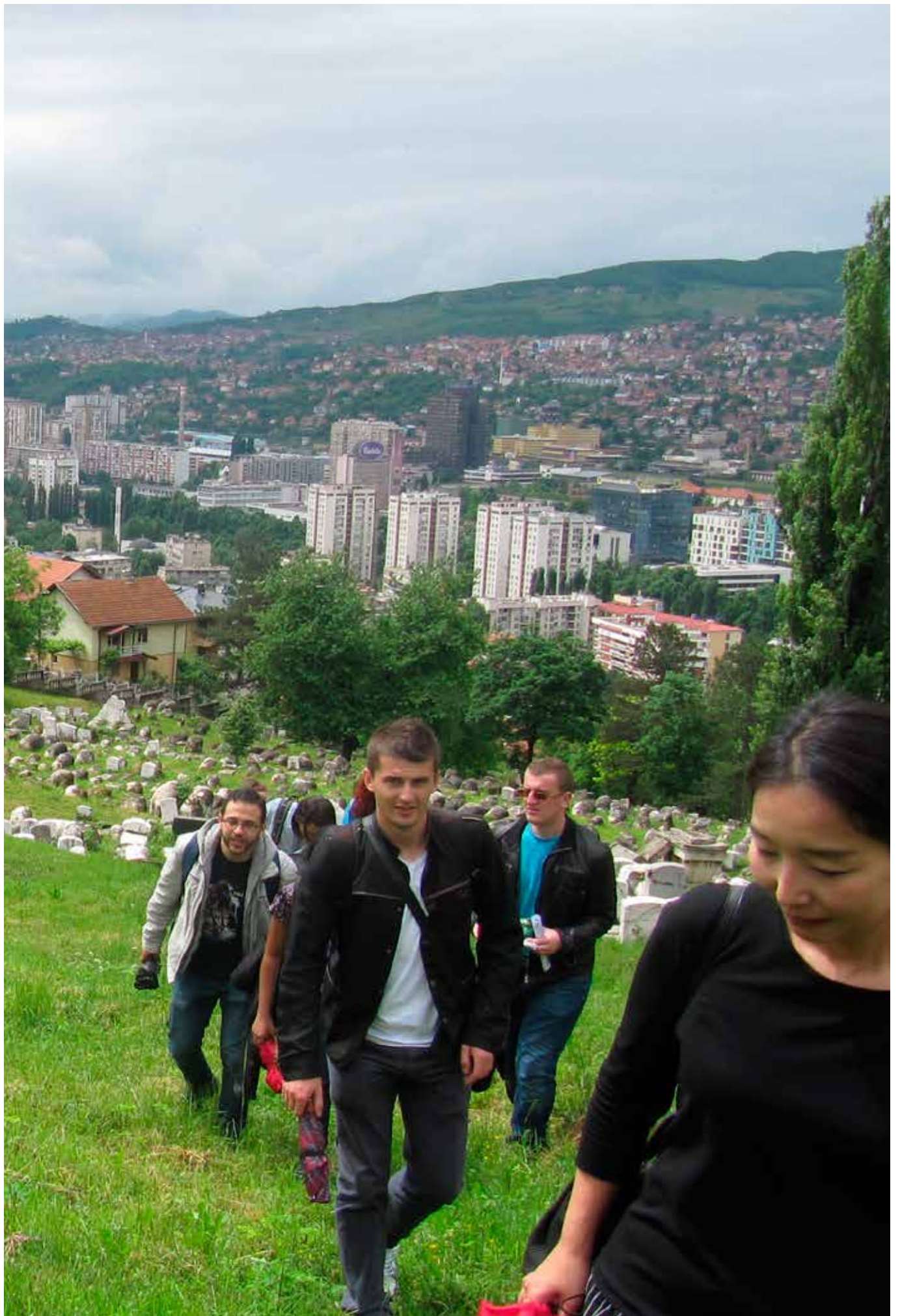
- SUPPORT IN PRODUCTION "FOOD FOR EU"
- SUSTAINS VIABLE RURAL COMMUNITIES
- FOUNDING OPPORTUNITIES
- DIRECT PAYMENT FOR FARMERS

TO PRODUCE FOOD
ENVIRONMENTAL PROTECTION
ANIMAL WELFARE
MAINTENANCE OF LAND



IMPROVE QUALITY OF LIFE





NATURAL HERITAGE WITHOUT BORDERS



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ECOLOGICAL VALUES ON TREBEVIĆ

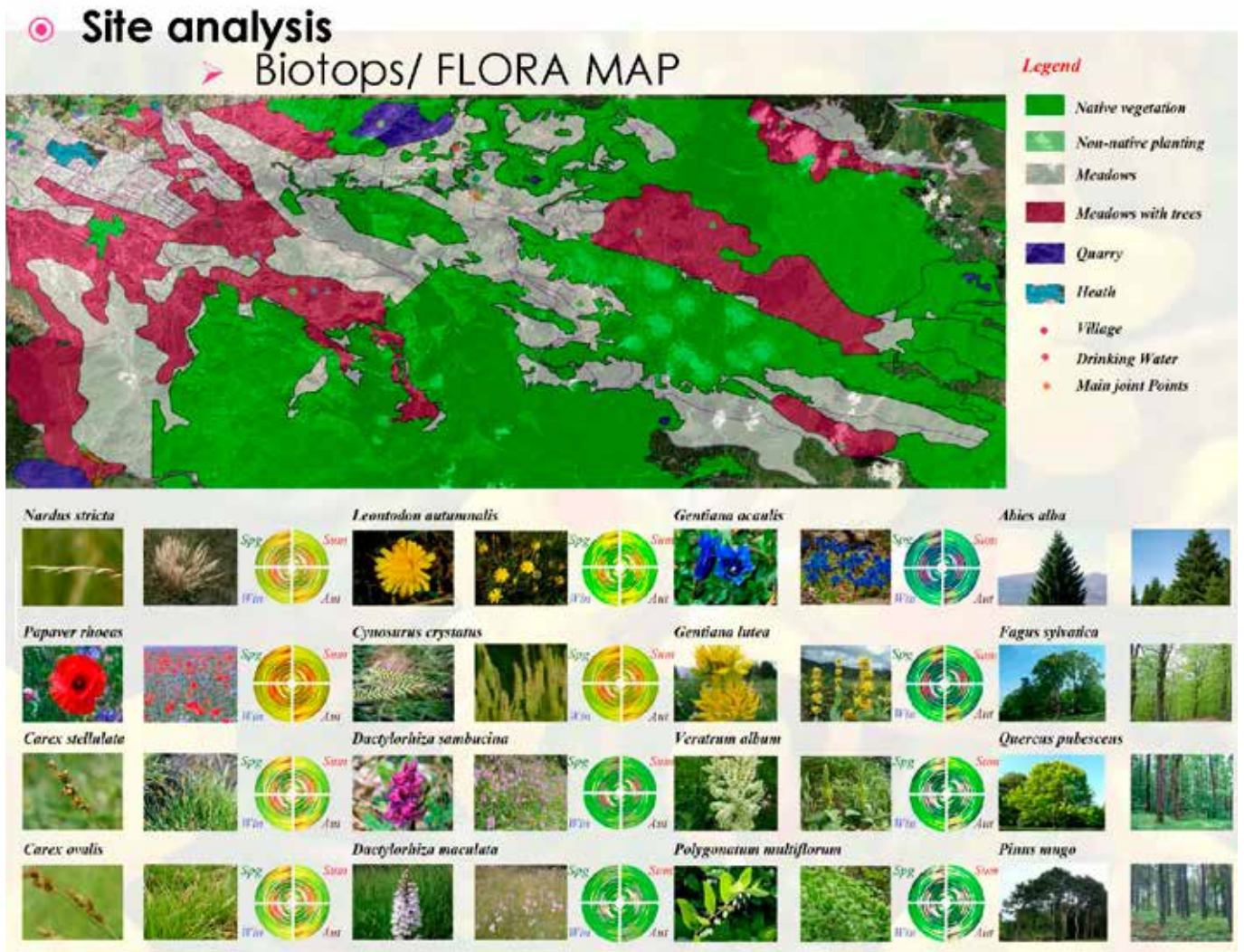
Mountain landscapes are very sensitive to environmental impacts. The cantonal part of Trebević mountain has recently been declared a protected area, which is certainly a great achievement. The official legislation characterises the protection category as follows:

„A Category Va protected area covers an area formed through the interaction of people and nature over time and is characterized by significant environmental, biological, cultural and aesthetic values.

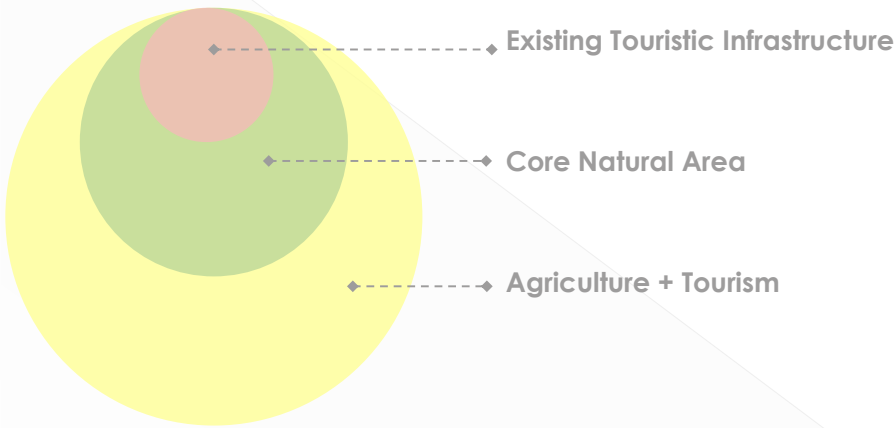
Preserving the interaction of people and nature is vital to protection and sustainability of the area, with associated natural and other values. (Službene novine Federacije BiH).

The landscape of Trebević has a high aesthetic value combined with a great biodiversity and richness of soil and geology types. Together with the architectural heritage, the traditional values and the proximity to the city this landscape is ideally suited for ecotourism and nature-based recreation.

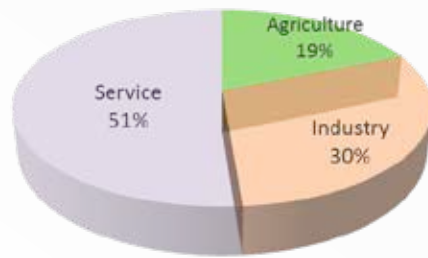
The map below gives an overview of the habitat types and the huge variation of plant species to be found in this mountain landscape. Many of those species are dependant on specific land uses such as pastures, orchards and meadows. Designing the subtle interaction of man and nature will be crucial for preserving the natural values of Trebević for future generations.



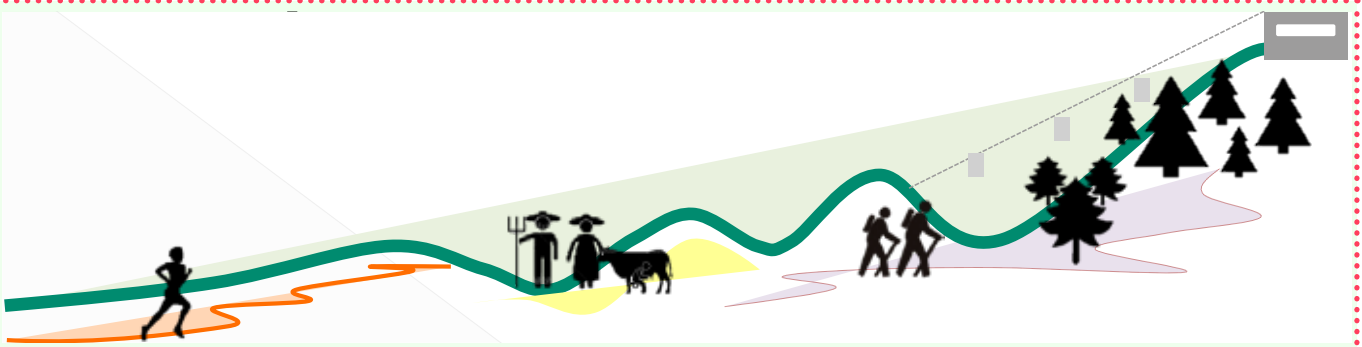
Zoning concept



Labor Force by Occupation (2013)



Source: CIA, The World Factbook



GUIDING CONCEPT

In accordance with the protection status that is already in place the main objective is the protection and preservation of this important landscape and its values that are resulting from the interaction of people and nature through the traditional land uses. It is important to maintain a balanced interaction between nature and human culture by protecting landscapes that are associated with traditional maintenance practices and social, cultural and spiritual values.

According to the listed values of Trebević, the first step is to divide the area into distinct zones depending on the specific needs

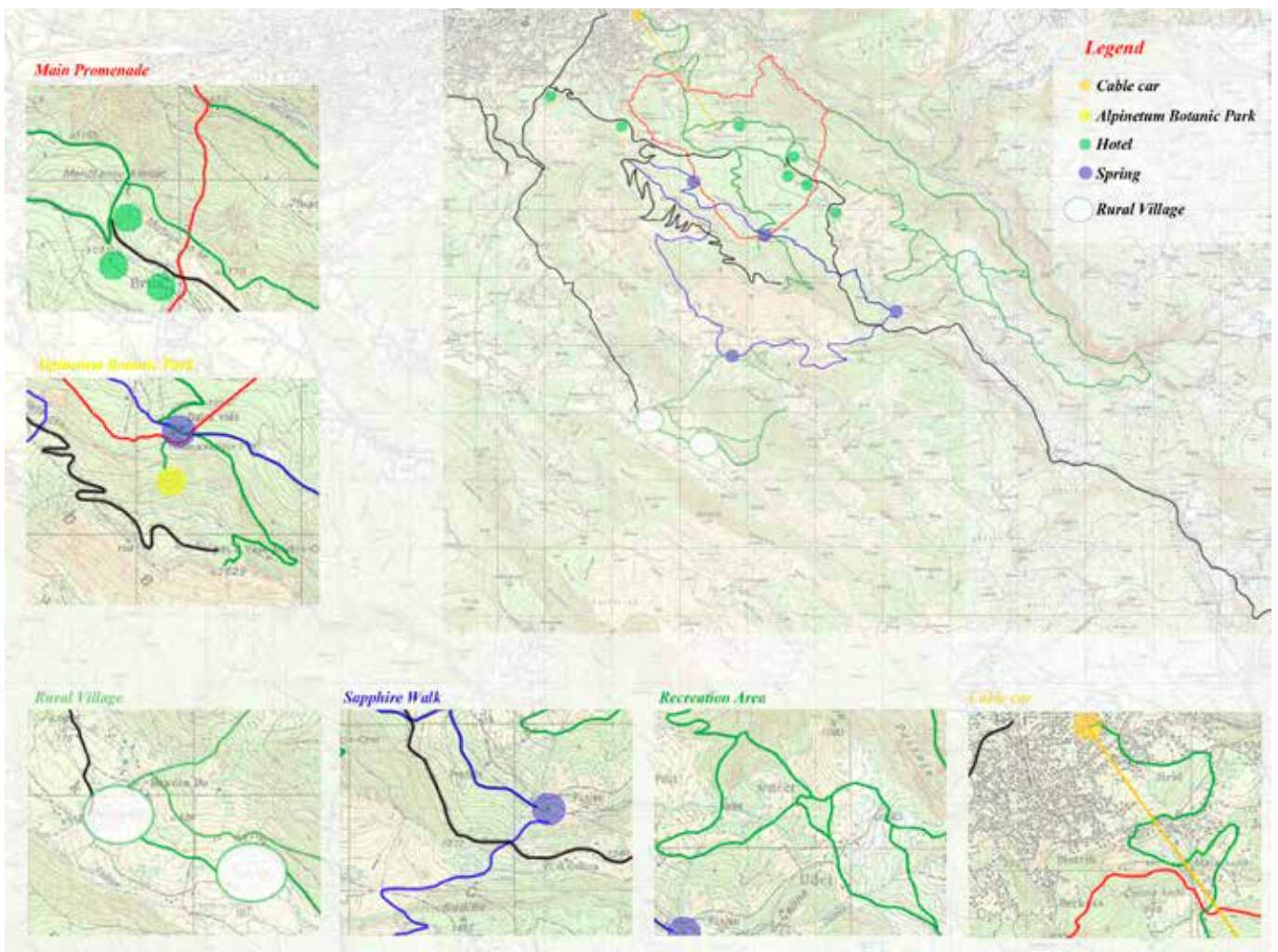
of the environment. Based on this zoning additional facilities and infrastructure will be proposed to enhance multiple functions.


Each zone will represent a specific degree of protection. This will guide the possibilities for visitor access, architectural interventions, nature protection, species management and the position of tourism and recreation infrastructure and services.

This management plan will generate opportunities for enjoyment, well-being and socio-economic activities through recreation and tourism. Natural products and environmental

functions will provide services to people and nature. A further objective is to establish a framework that will encourage local community involvement in the management of this valuable zone. An important aspect of this approach will be the conservation of agro-biodiversity by supporting traditional and small-scale farmin around Trebević.

A further element will be the reestablishment of the former Trebević Alpinetum within an overall framework of nature pedagogy.





Alpinetum species


- Pinus heldreichii (120 trees)
- Pinus nigra (28 trees)
- Pinus silvestris (1 tree)
- Pinus cembra (305 trees)
- Pseudotsuga menziesii (7 trees)
- Larix decidua (6 trees)

Significant part was the forest of Picea omorika (58 trees), endemic specie and 35 autochtonic species

BUSHES


- Lilium martagon
- Asperola odorata
- Cardamine bulbifera
- Cardamine trifolia

Ruscus aculeatus
-Mercurialis ovata
-Dictamus albus
-Parius quadrifolia



FOREST


- Quercus robur
- Populus tremula
- Fagus sylvatica
- Cornus mas



RIVER ZONE

- Salix caprea
- Salix purpurea
- Salix cinerea
- Humulus lupulus
- Frangula alnus

-Viburnum lantana
-Viburnum Rafinesquianum
-Geranium robertianum



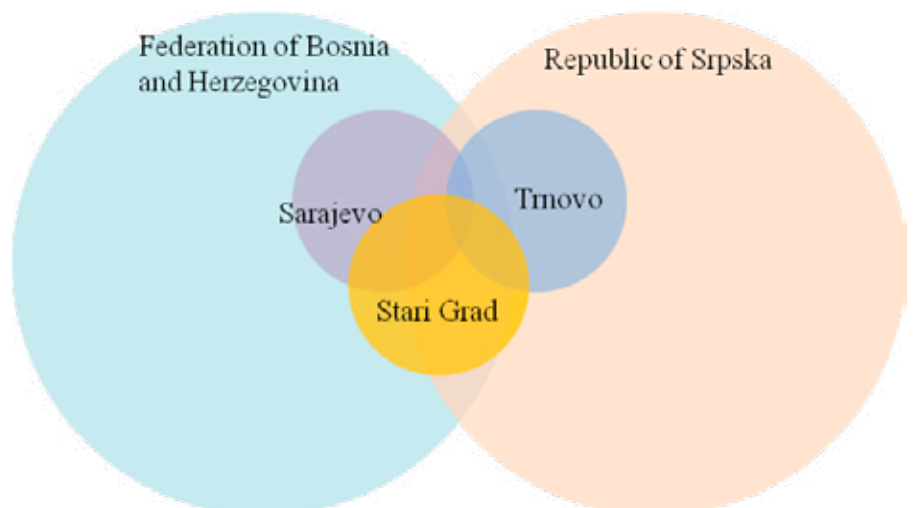
GOVERNANCE AND FINANCE

Financing can be conducted from various sources, such as:

- Budget of City of Sarajevo
- Budget of Kanton Sarajevo
- Budget of Republika Srpska
- IPA funds (limit per 1 project is 2 million KM)
- Other international grants and funds „KJU za zasticena podrucja“ for protected areas

Governance of the area of Trebević mountain is currently divided between two entities: the Federation of Bosnia and Herzegovina and the Republic of Srpska. Within these, it is governed by several municipalities: Istocni Stari Grad, Trnovo and Istocno Sarajevo. We propose composing a new body, formed from officials from both entities and all municipalities, who would govern this zone together, since the benefits for nature should be above political disputes.

The landscape Trebević mountain would benefit from an integrated management structure formed by actors from all entities, sectors and communities.





AGRI-SOLUTION FOR TREBEVIĆ



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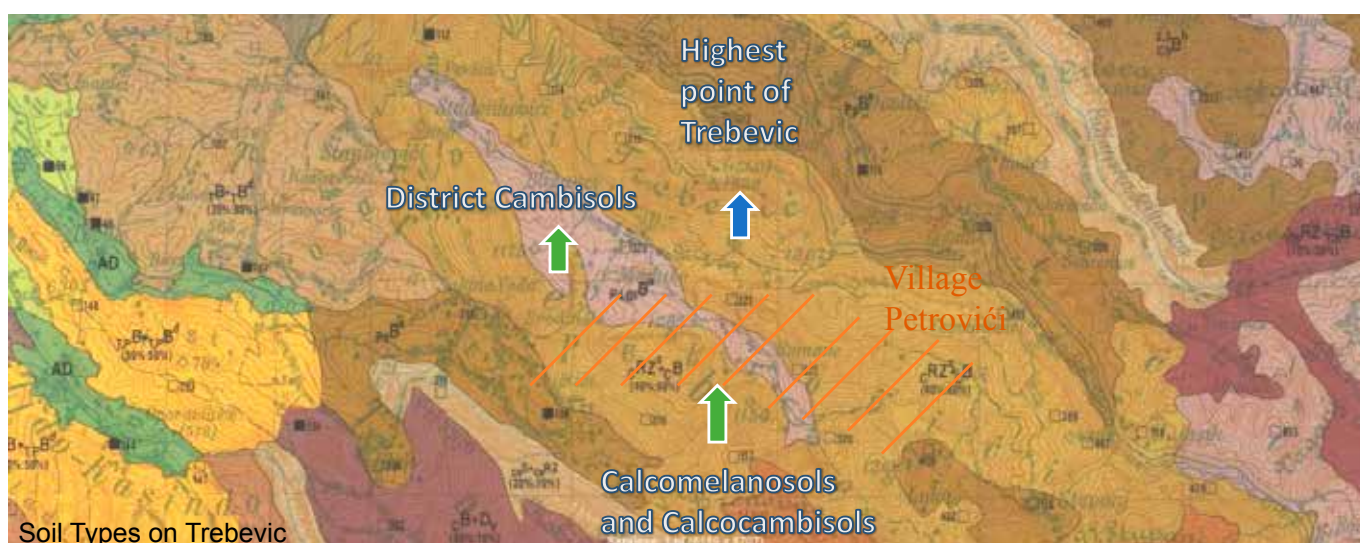
TRADITIONAL FARMING

In the beginning of this workshop we started to collect some general information on agriculture in Bosnia, especially with regard to the current state of agriculture in the Trebević mountain area. The idea was to develop a strategy for a better agriculture system. The landscape has a good climate and much natural diversity, but because of the geomorphological conditions most of the farming needs to take place

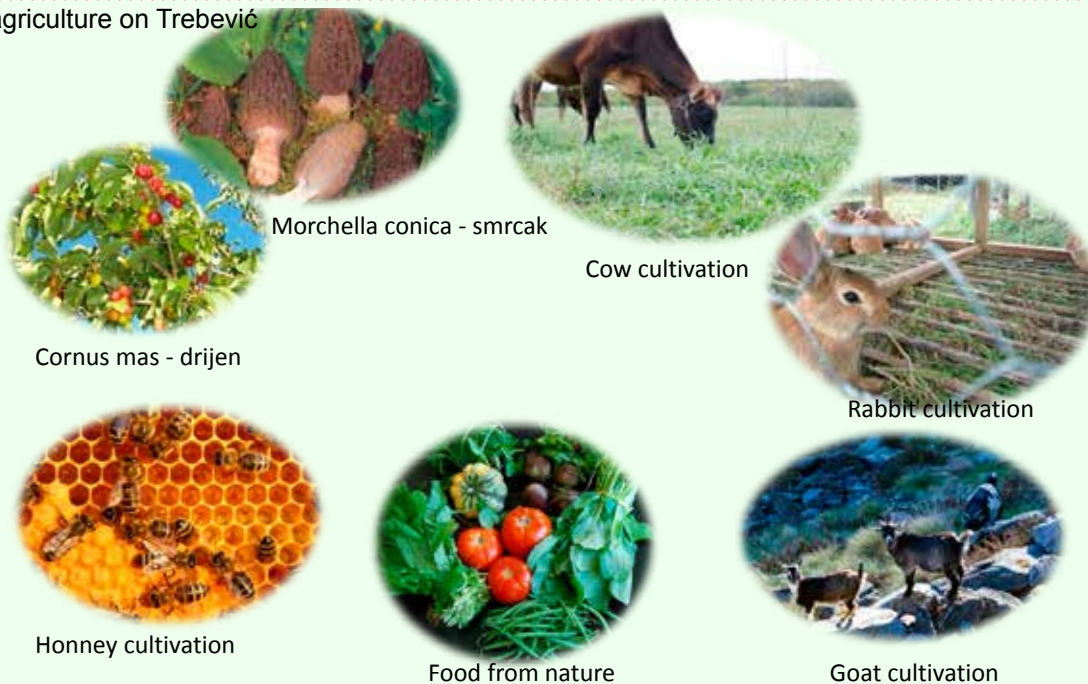
on the slopes. The farmers thus work on very small scale with small properties. They are not organized and cannot hope for any big profit.

We concluded that the farmers would need a new system with respect to the agricultural method but also considering marketing and economics. Our concept is the Eco-Village. In the current situation, individual farmers work in their own

small farm and they produce very little profits from their activities. On the other hand, their practice supports biodiversity and the beauty of the landscape. But because of this weak production system the young generation of the villages is forced to move out to the city to find other perspectives. Our concept aims to interfere in this vicious circle.



Possible agriculture on Trebević



THE VILLAGE AS AN ECONOMIC UNIT

We believe that a whole village can be able to function as one economic community. For instance, if they can bring visitors from outside and organise an educational agriculture experience tour on their farmland. Both urban dwellers and foreign tourist could be interested in such offers in combination with the beautiful nature and the rich biodiversity of the Trebević mountain area. This could be managed by organizers acting on behalf of a group of villages.

Another idea is a new land use method. We came to know that there are many abandoned spaces in this area. If we are able to reuse them, people would realize the importance of these lands. In order to function as a system, we suggest renting land to unemployed people. During the long

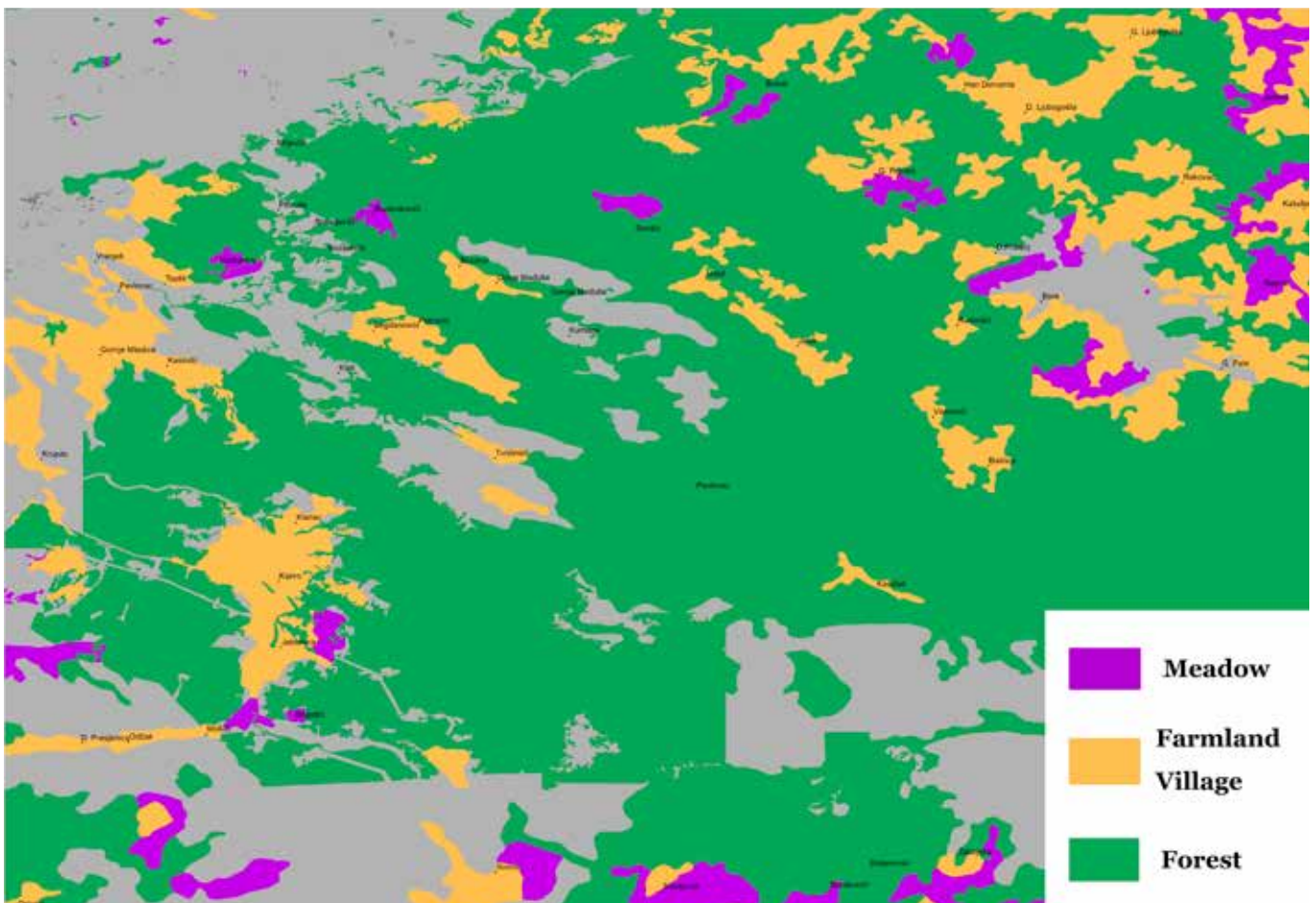
period of renting, new farmers work and produce agriculture products and gain profits from them. Then the 'new farmers' can return the rent payment to the government. However, property issues need to be analysed at a more detailed level. After the war, a lot of documentation of private or public property has been lost so that it is hard to see borders between them and there are many unresolved ownership issues.

Another idea is to establish a new agriculture production system. Farming on Trebević is very limited because of the slopes. Therefore, more quality than quantity needs to be produced.

We divided Trebević into three units by different types of agricultural

activities. Unit one is close to the city center and the slope neighborhoods and easy to access. This area can be defined as agriculture-tourism farm land. Unit two is surrounded by forest, these area could be for more wild growth products, such as mushrooms. But this area has limited access. We need to figure out if it is worth to open a farm there again. Unit three could have most potential for agricultural use. They have larger fields compared to the other units. This zone can be used for our business concept of renting land.

Current 'green' land uses on Trebević





A SUSTAINABLE BUSINESS MODEL

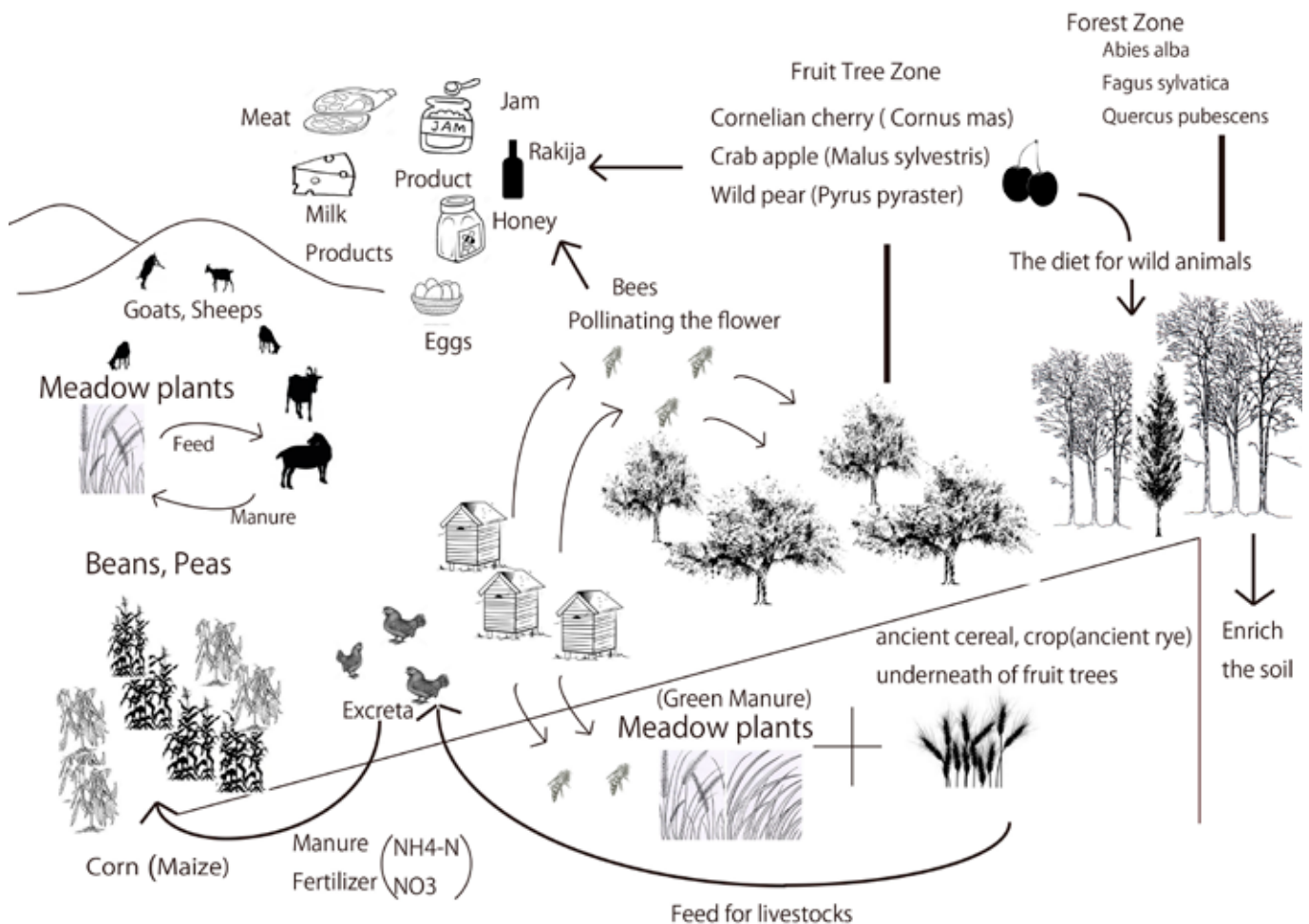
We picked unit three with the villages of Petrović, Blizanci, Studencović and two other small areas to investigate how the business model could work. As mentioned already in our guiding concept, the villages would be able to manage a large scale agriculture and work as one community. They need a center to gather the

products from all the village. The center and the street connecting to the city should function as traffic hub to carry products. Although we did not mention in our guiding concept, this multifunctional hub should also include an educational unit to train new farmers who want to learn about agricultural practices. Also, we built a new agro-

environment system for Petrović village based on meadows.

Meadows on Trebević are rich and diverse in plant species. In the future, given that Bosnia might enter the European Union, the village could obtain funding for keeping this high nature value farming practice.

A nex agri-environment model for Petrović village





The landscape on the southern slope of Trebević mountain is shaped by traditional farming practices, image: Emira Hukić

FINANCIAL SUSTAINABILITY

As we mentioned already above, meeting the EU's criteria for high nature value farming is one method given that EU membership for Bosnia will become a mid-term perspective. Renting land and paying back later is another idea. But this also requires a completely new system for solving the issue of property boundaries.

Another way is to establish an Agriculture-NGO for this area in order to support farmers with ideas, networking and education. We experimentally created a Facebook community where Trebević farmers and people meet and share information and sell/ buy the local farm products personally or organizationally. If they have this kind of organization, it would be much faster and convenient. They will develop ideas on their own without relying on external support.



The distribution, communication and education hub for local products and people from the Trebević villages



Our group on a field trip to the villages image: Ellen Fetzter

Small-scale farming in one of the villages, image: Emira Hukić



NEXT DESTINATION: TREBEVIĆ



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TREBEVIĆ AND ITS PEOPLE

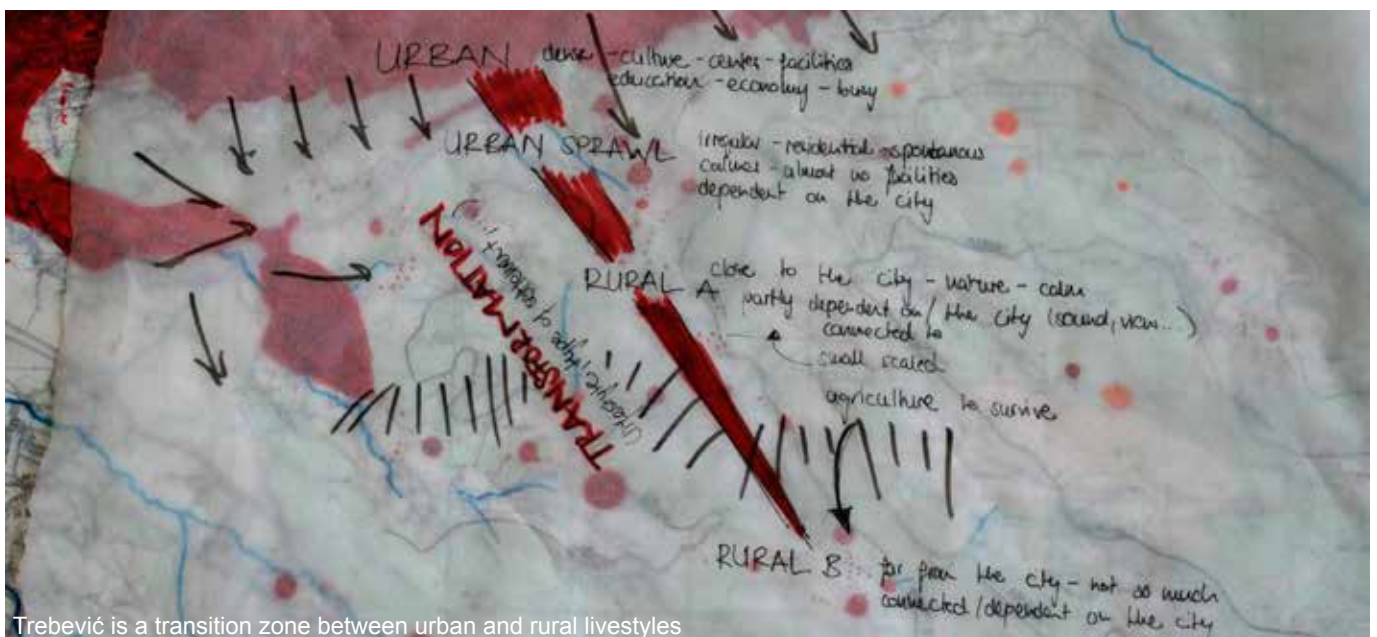
Our group was focusing on the social dimension of this landscape by analysing behavior patterns and socioeconomic data. We tried to understand the behaviour of different user groups mainly by analyzing the landscape itself. In this process we found three characteristic groups that are relevant for the interaction with the landscape. These groups are permanent or temporary (1),

old or young (2) and changing or consuming users (3). By combining these main three characteristics with each other, we developed eight different typologies of social behavior patterns.

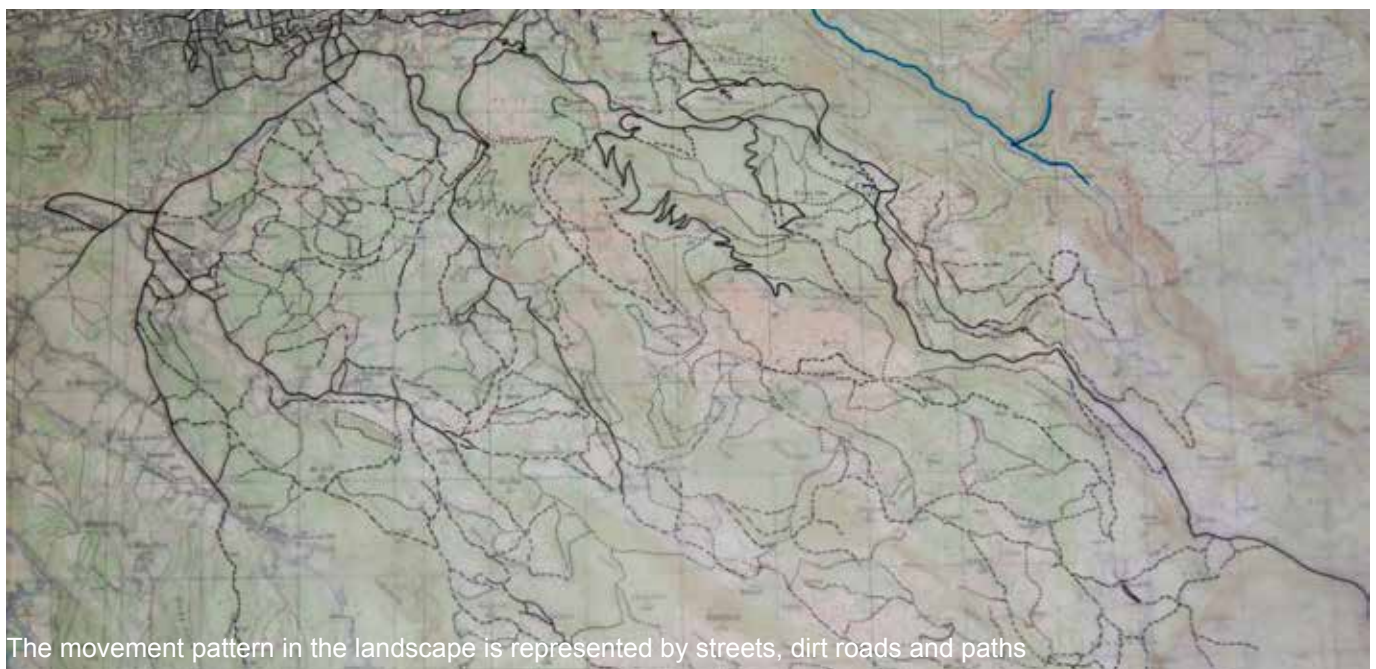
This helped us to understand the relation between the people and the landscape. In a further step we talked again to people in the region

to get a better understanding of their needs and expectations as well as their imaginations. All of this is under strong influence of driving forces such as demographic change and the search for economic opportunities.

How can we react on these ongoing changes and still provide a livable landscape and strengthen its value?

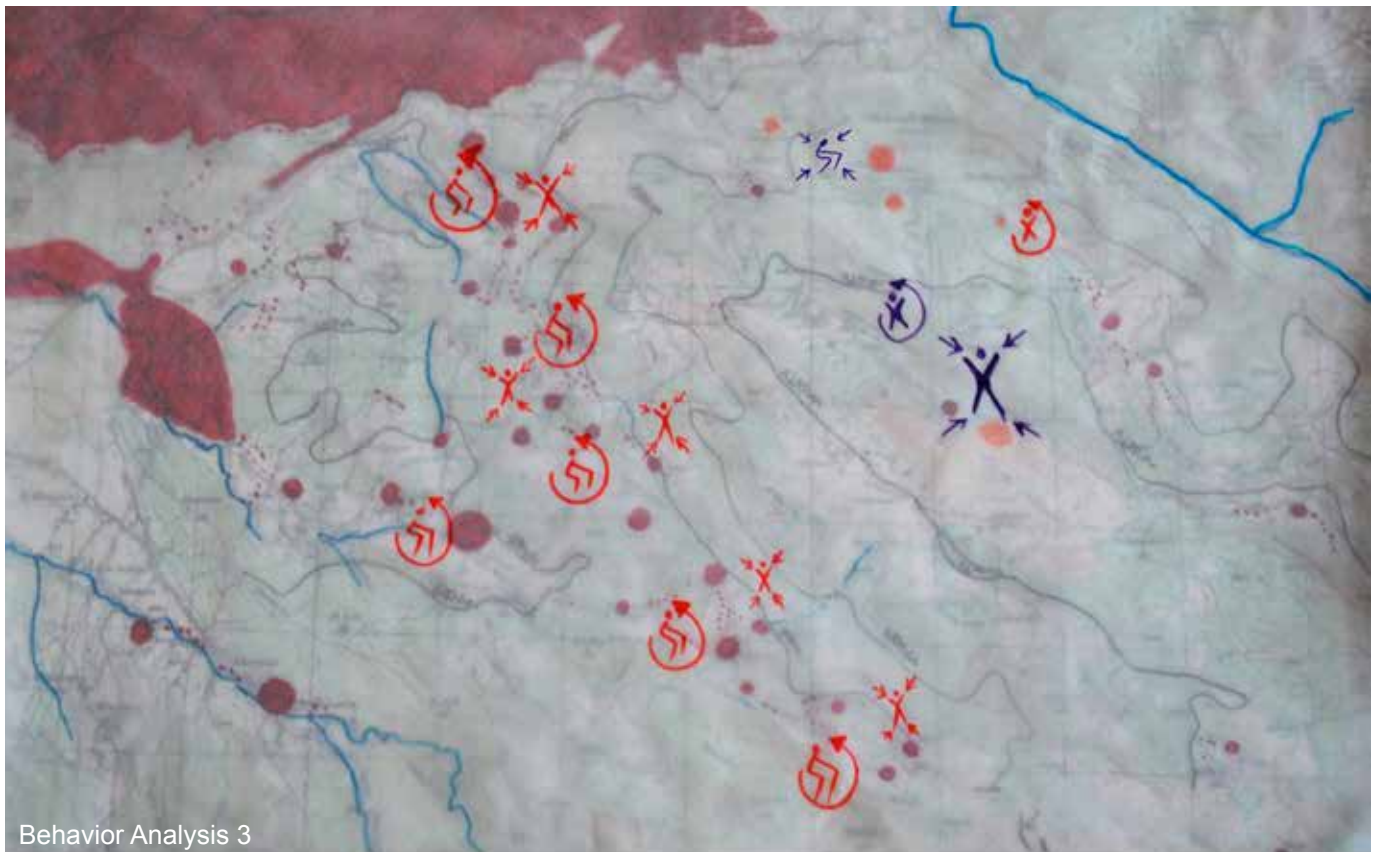


Trebević is a transition zone between urban and rural lifestyles



The movement pattern in the landscape is represented by streets, dirt roads and paths

- roads in good condition > possibility for fast movement and bus transportation
- - - - - roads in bad condition > possibility for movement also by vehicles, bikes,...
- pedestrian routes > walking areas, just slow movement



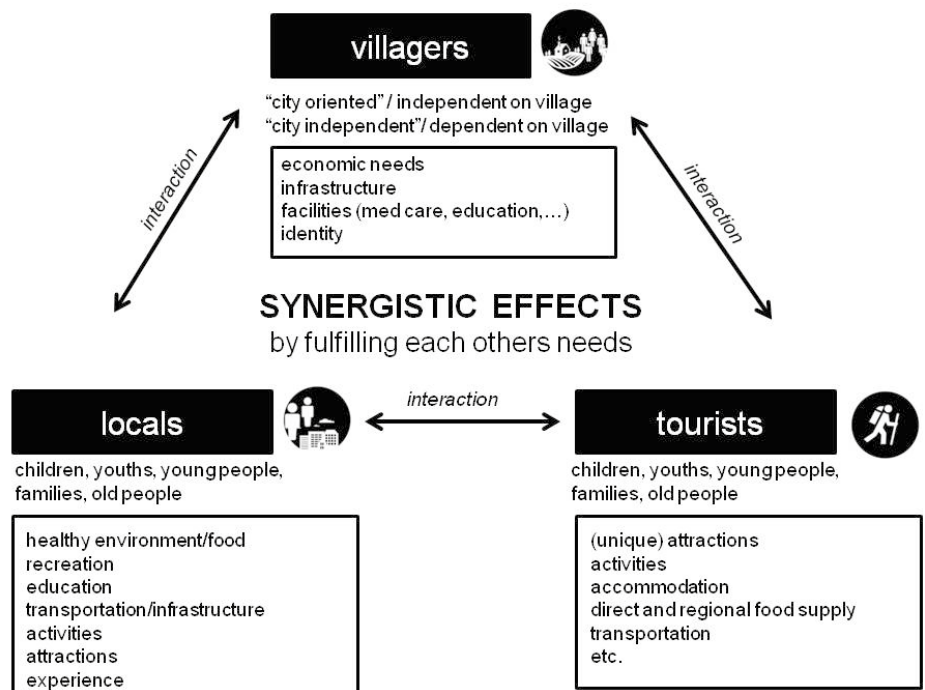
Behavior Analysis 3

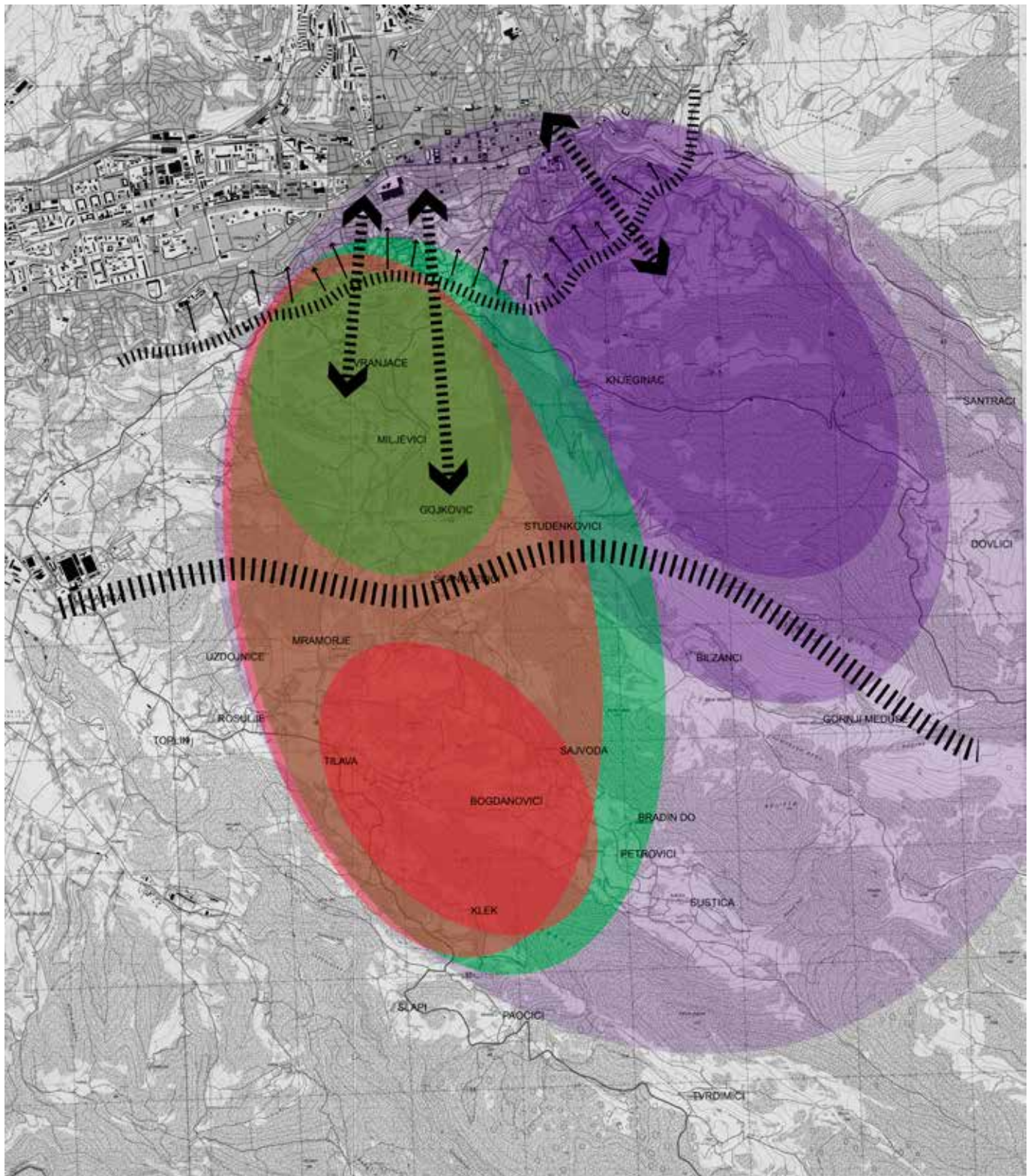


SYNERGY EFFECTS

Since the topic was driven by social aspects our concept is directed to different target groups which can be found on Trebević Mountain: the villagers, the locals from the city of Sarajevo and potential tourists.

By fulfilling needs related to different sub-target groups interactive processes will arise and synergistic effects will occur. Thus villagers can for example provide healthy and regional food for people from the city, which will - with the aspect of tourism - positively influence the economic value of the region and therefore give a perspective for young people in the region.



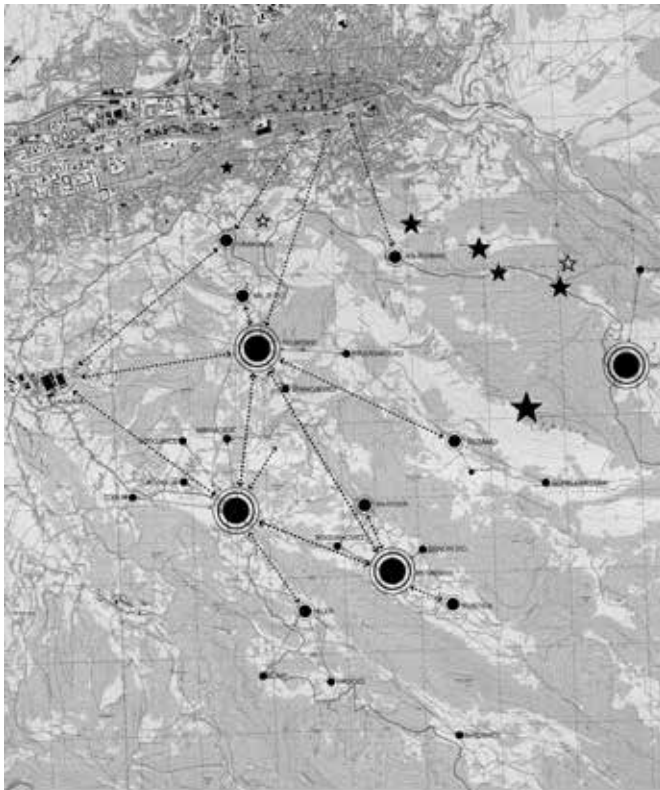


ACTIVITIES
 SUSTAINABLE ECONOMY
 INFRASTRUCTURE
 PHYSICAL BORDER
 CONNECTIONS

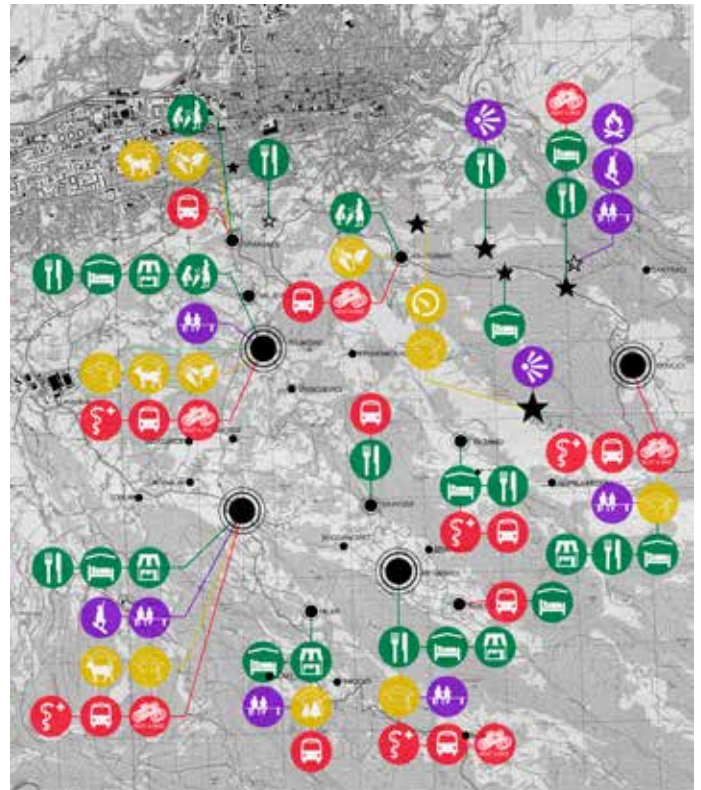
In order to translate this conceptual approach to the space we worked out a zoning of the region regarding the focus of the development. Following that we implemented multifunctional hubs in the region on two levels, where sustainable

economy, activities, education and infrastructure can be located. In addition to the hubs we also worked out various tracks in the region on different challenging levels in order to connect the

hubs and provide interesting movement routes for tourists as well as locals. The whole concept is based on strengthening already existing structures, what ensures a sustainable and realistic development.



● MULTIFUNCTIONAL HUBS, 1 LEVEL ● MULTIFUNCTIONAL HUBS, 2 LEVEL ● OTHER VILLAGES ★ ATTRACTION SPOTS - - - - - CONNECTIONS



SUSTAINABLE ECONOMY
 ● RESTAURANTS
 ● ACCOMMODATION
 ● REGIONAL MARKET
 ● GARDENING

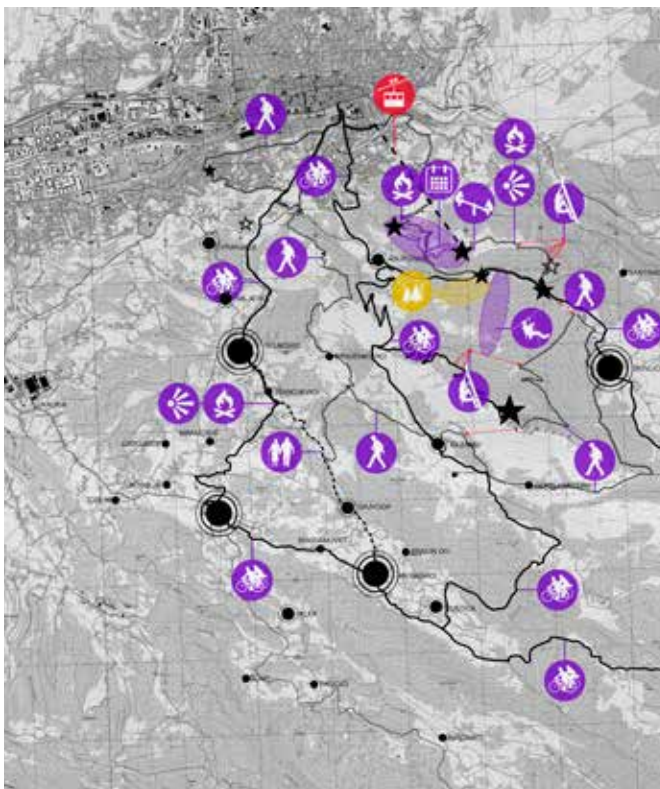
ACTIVITIES
 ● PICNIC PLACES
 ● YOUTHS
 ● RESTING
 ● SCENERY

EDUCATION
 ● HISTORICAL PLACES
 ● EXPERIENCE ANIMALS
 ● EDUCATIONAL FARM
 ● EDUCATIONAL FOREST
 ● SCHOOL

INFRASTRUCTURE
 ● MEDICAL CARE
 ● PUBLIC TRANSPORTATION
 ● RENT A BIKE STATION

spatial implementation: the hubs

Spatial implementation: paths. The comics are a kind of story-telling of the future vision



● CYCLING ● HIKING ● WALKING ● CLIMBING ● ADVENTURE PARK ● PLAYGROUND ● EVENTS ● PICNIC ● SCENERY ● CABLE CAR ● EDUCATION FOREST





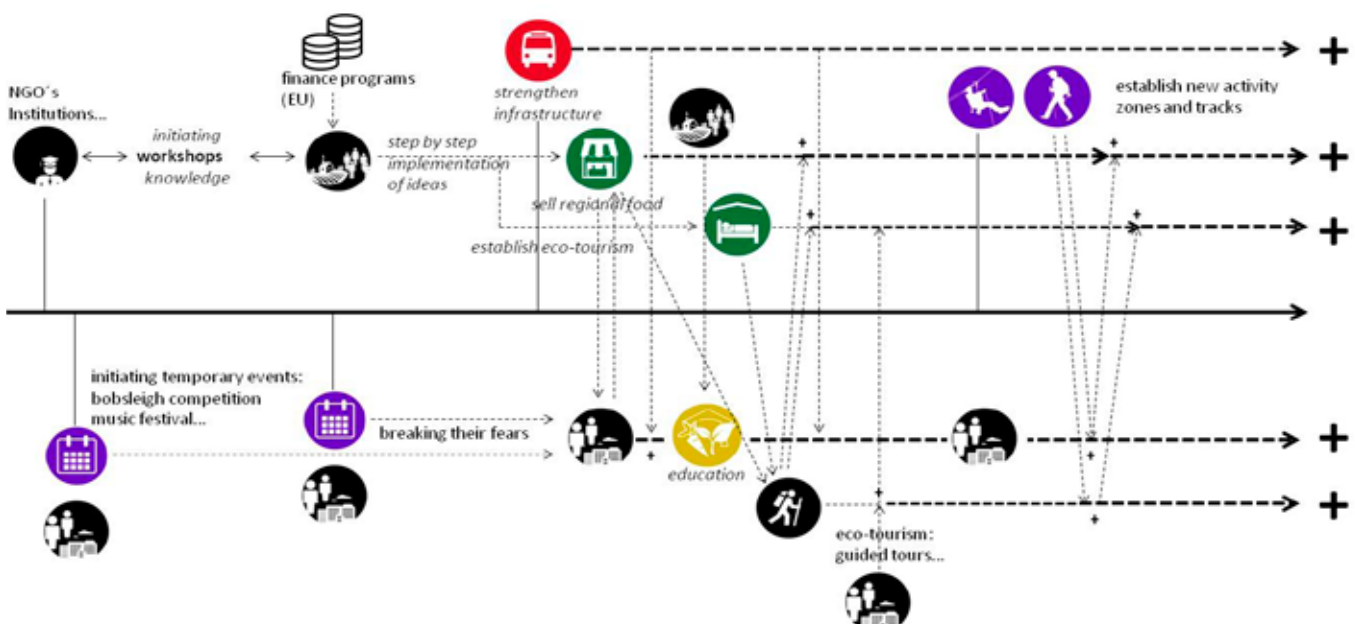
GOVERNANCE AND FINANCE

We propose a timeline that reflects the project's progress stages of implementation and financial gain. The timeline is based on two parallel implementation levels: the organizational and the spatial. First steps would be initiating workshops for the purpose of exchanging knowledge between professionals of the academic institutions and nongovernmental organization with the villagers. And with the financial support from EU programs, the

realization of suitable ideas (tracks) that came out from the workshops, gradually are being set. Selling regional food and establishing eco-tourism would be possible after strengthening the infrastructure (such as transportation).

Parallel to the organizational stage, temporary events will take place in the mountain such as music festivals, these events will be organized by the locals of the city

Sarajevo, through them the people will start breaking their own fears to accept the idea to go back up to the mountain. Farming education and guided tours for eco-tourism programs are being introduced during these temporary events. By establishing these activities the profit will start to increase progressively. In the future other tracks and new activity zones will be implemented and that will maximize the profit for the villagers benefit.



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