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IGNORED REGIONS: SLOVENIAN TERRACED LANDSCAPES

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ABSTRACT

Research, academic studies, civil initiatives, important recognitions, and various documents about terraced landscapes have intensified in recent decades. This is proof that awareness about terraced landscapes is growing at the global, European, and national levels. Research, academic studies, and civil initiatives have taken place in Slovenia as well. This study determines how many municipalities in Slovenia contain terraced landscapes, and it reviews documents at the national level (laws and strategies) and local level (spatial documents) to determine whether and how they refer to terraced landscapes. Surprisingly, global and international trends and Slovenian research on terraced landscapes have not affected national and local documents with regard to themes specifically addressing terraced landscapes. Because Slovenian terraced landscapes have too many important values to remain ignored, we propose a procedure enabling institutions at the national and local levels to acknowledge their existence.

Keywords: terraced landscapes, national strategic documents, spatial planning, spatial municipality plan, Slovenia

REGIONI TRASCURATE: PAESAGGI TERRAZZATI DI SLOVENIA

SINTESI

Negli ultimi decenni si sono intensificate le ricerche, gli studi accademici, le iniziative civili, i riconoscimenti importanti e la produzione di vari documenti relativi ai paesaggi terrazzati. Questo dimostra che la consapevolezza di aree terrazzate sta aumentando sia a livello globale ed europeo sia su quello nazionale. Le relative ricerche, gli studi accademici e le iniziative civili hanno avuto luogo anche in Slovenia. Lo scopo del presente studio è stato stabilire quanti comuni sloveni comprendono paesaggi terrazzati, ed esaminare documenti a livello nazionale (leggi e strategie) e locale (documenti sulla gestione dello spazio) per determinare se e come essi si riferiscono a paesaggi terrazzati. Sorprendentemente, le tendenze globali e internazionali, nonché le ricerche slovene su aree terrazzate non hanno influito sui documenti nazionali e locali relativi a temi che affrontano specificatamente le aree terrazzate. Siccome i paesaggi terrazzati in Slovenia hanno comunque troppi valori importanti per essere ignorati, proponiamo un procedimento che permetterà alle istituzioni a livello nazionale e locale di riconoscere la loro esistenza.

Parole chiave: paesaggi terrazzati, documenti nazionali strategici, pianificazione territoriale, piano di gestione dello spazio comunale, Slovenia

INTRODUCTION

Awareness of terraced landscapes is growing considerably at the global, European, and national levels. Research, academic studies, civil initiatives, important recognitions, and various documents about terraced landscapes have intensified in recent decades. For example, researchers and professionals are also paying increasing attention to terraces in China, the world's most populous country and the world's second-largest country by land area, because two-thirds of China consists of mountains, high plateaus, and hills with many terraces (Junchao, 2015).

The most important civil initiative on the protection, preservation, and promotion of terraced landscapes and related cultures worldwide is the International Terraced Landscapes Alliance (ITLA), formed during the first world conference in 2010 in China. Farmers, researchers, activists, and others involved in ITLA are dedicated to promoting the significance of terraced landscapes. National branches of this civil initiative were also formed, such as the Italian branch, which is preparing the Third International Conference on Terraced Landscapes in 2016 (Terraced Landscapes: Choosing the future, 2016). Associations dedicated to dry stone walls, built without any mortar or cement, in various countries such as the UK, Canada, and Australia "promote greater understanding and knowledge about the traditional craft of dry stone walling" and "encourage the repair and maintenance of dry stone walls throughout the country" (DSWA, 2015). Similarly, civil initiatives have also emerged in Slovenia (as well as initiatives within or based on European projects) dealing with dry stone walls, such as the latest initiative for the preservation and promotion of karst dry wall construction (Partnerstvo kraške suhozidne gradnje, 2016).

Terraced landscapes have been recognized at the global and European levels. Since the new cultural landscape category was introduced in 1992 for potential world heritage sites, six terraced landscapes have been listed as UNESCO World Heritage Sites (Peters, 2015). "The Rice Terraces of the Philippine Cordilleras is an outstanding example of an evolved, living cultural landscape that can be traced as far back as two millennia ago in the pre-colonial Philippines" and was added to the list in 1995 (UNESCO, 2015a). The cultural landscape of the province of Bali in Indonesia consists of rice terraces and their water temples and is a result of the *subak* system as a manifestation of the *Tri Hita Karana* philosophy (UNESCO, 2015b). It was added to the list in 2012. Spectacular terraces of the cultural landscape of the Honghe Hani rice terraces were acknowledged in 2013 (UNESCO, 2015c). Recently, the cultural landscape of southern Jerusalem in Battir, a land of olives and vineyards, was identified as a representative of an outstanding example of a landscape (2014; UNESCO, 2015d). Two European terraced areas can be found on the UNESCO list. In 1997, "Portovenere, Cinque Terre, and the Islands (Palmaria, Tino and Tinetto)" was added to the UNESCO World Heritage List (UNESCO, 2015e); Cinque Terre is a belt on the northeastern coast of the Ligurian Sea in Italy. The Lavaux vineyard terraces along the south-facing northern shores of Lake Geneva were added to the list in 2007 (UNESCO, 2015f). In these terraced landscapes, not only the terraces themselves are protected and safeguarded, but also the "intangible culture and knowledge of the people that create them" (Peters, 2015). Slovenia has established the Register of Immovable Cultural Heritage, which also includes some terraced landscapes and mentions the cultural landscape, such as the Jeruzalem Hills near the village of Jeruzalem (Register of Immovable Cultural Heritage).

The Honghe Declaration (2010) is a significant document on terraced landscapes at the global level, drawing attention to their condition and supporting the commitment to maintaining interest in terraced landscapes. "The European Landscape Convention of the Council of Europe promotes the protection, management and planning of European landscapes and organises European co-operation on landscape issues. . . . It covers all landscapes, both outstanding and ordinary, that determine the quality of people's living environment" and "provides for a flexible approach to landscapes whose specific features call for various types of action, ranging from strict conservation through protection, management and improvement to actual creation" (European landscape convention, 2015). The EU's Common Agricultural Policy (CAP) included cultivated terraced landscapes in the Rural Development Policy 2007–2013 as Less Favored Areas (LFA) and in its agricultural biodiversity action plan (to improve or maintain biodiversity and prevent its decrease due to agricultural activities). The preservation and maintenance of terraced landscapes is also among the priorities of the thematic strategy for soil protection (Lasanta et al., 2013).

Documents at the Slovenian level present a challenge examined in this article. The study reviews these documents (various legislation and spatial documents) at the national and local levels to determine whether references are made to terraced landscapes in them and what kind of context they are cited in. In parallel, a study has been conducted to determine how many local municipalities in Slovenia contain terraced landscapes. Because cultivated terraces have fairly strongly (and in some places even predominantly) characterized the landscape in many parts of Slovenia, we propose a procedure allowing institutions at the national and local levels to acknowledge their existence.

RESEARCH ON TERRACED LANDSCAPES

The significance of terraced systems and research on them has been confirmed by two world conferences on terraced landscapes, held in 2010 (China) and 2014 (Peru). The two conference publications cover various themes related to terraced landscapes and they also

address research on terraced landscapes. In the second conference volume, Junchao (2015) reports on thirty years of field investigations in China, which have been a basis for a long-term plan to develop terraced regions. In Peru, research has been carried out on terraces since 1981 for the entire country, urban areas, and hydrographic areas. At all of these scales, researchers are dealing with inventorying and restoring terraces, promoting agricultural products and biodiversity, the use of terrace systems in promoting agricultural tourism, and other topics (Morales & Saboga 2015). Studies at the European level on inventorying, preserving, restoring, and planning terraced landscapes have also been conducted; at least nine were carried out between 1990 and 2008 (SIG 2009), including the following:

(1) The PROTERRA project (1997–2001, Lécuyer, 2006; *Les systèmes de terrasses: définitions, outils et méthodes d'approche*, Tatoni, 1996) dealt with dynamic rehabilitation of the cultivated terraces that characterize the Mediterranean area. The approach started with the finding that the identity of the landscape is based on traditional cultivars—thyme, lavender, grapes, and olive trees—and that the heritage restoration of agricultural areas must be associated with the establishment of young professional farmers to develop the original production systems (Fleury 2003).

(2) The RERTC project (1997–2001, *Restauration, entretien et revalorisation des terrasses de culture*) defines the problems of cultivated terraced landscapes in human terms: How can one convince local companies that the culture of terraced areas is important? What kind of motivations do farmers need to maintain terraced systems? What are the new economic opportunities for these traditional areas (Mediterranean Centre of Environment)?

(3) The PATTER project (1999–2001) describes the methodology of terraced heritage for cultivated terraces on the Spanish island of Majorca and in areas surrounding Nice and Genoa (Project PATTER, 2002).

(4) The TERRISC project (2004–2006) explores the preservation of terraced landscapes as a strategy for preventing natural disasters, especially floods and erosion, on the Balearic and Canary Islands, in Portugal, and in southwestern Europe (Martin, 2006).

(5) The ALPTER project (2005–2008, The Terraced Landscapes of the ALpine Arc) reviewed the degradation of agricultural terraces caused by agricultural abandonment in the Alps and the possibilities for rehabilitating these terraced spaces (ALPTER, 2015). In the ALPTER project, for the first time one of the partners studying terraced systems was from Slovenia (ALPTER, 2015a). This partner also prepared the plan and constructed new terraces in the settlement of Medana.

One national research project has focused entirely on terraced landscapes in Slovenia. The basic goal of the project Terraced Landscapes in Slovenia as Cultural Values was a complex interdisciplinary assessment of terraced landscapes across the entire country (Terraced Landscapes in Slovenia as Cultural Values, 2016).

Studies of terraced landscapes have greatly expanded lately, although an overview of these studies is lacking (Varotto, 2014). Research projects at the global and European levels have similar research themes. The literature concentrates on identifying terraced systems, their technologies, and their social organization; on research about natural hazards, land degradation, and conservation; on studies of the development of terraced landscapes, their role in agricultural production, and food security; on tourism development and promotion; and on policies, regulations, and management for preserving terraced landscapes and their functioning. In the past, studies in Slovenia have concentrated on reporting the extensive abandonment of cultivated terraces in the Koper Hills and Gorizia Hills (Vrišer, 1954; Melik, 1960; Titl, 1965); on terrace construction methods following the development of agricultural technology and terrace construction methods using agricultural machinery (Colnarič, 1971, 1985, 1991; Škvarč, 1999; Vršič, Lešnik, 2001; Škvarč, Kodrič, 2007); and on terminology connected with terraces and old viticulture techniques in villages in the countryside around Koper from the mid-nineteenth century to the 1950s (Presl, 1995).

The partnership between the University of Ljubljana's Faculty of Architecture and the ALPTER project led to a decisive turning point in research on terraced landscapes in Slovenia. The articles were published on terraced landscapes (Ažman Momirski, 2008), terrace construction (Ažman Momirski, Berčič, 2007), manuals of construction techniques for terraces (Ažman Momirski et al., 2007), geomorphology (Petkovšek et al., 2008), land use (Petek, 2008), and risk assessment (Komac, Zorn, 2008). An international conference entitled Living Terraced Landscapes held in Ljubljana at the conclusion of the ALPTER project demonstrated that more experts deal with terraced landscapes than is immediately apperent (Living Terraced Landscapes, 2008). After attempts to review all terraced landscapes in Slovenia, including their typologies (Ažman Momirski, Kladnik, 2008, 2009, 2012) such studies expanded (Križaj Smrdel, 2010). Continued research on Slovenian terraced landscapes provided the motivation for a volume on terraced landscapes at the regional scale of sub-Mediterranean Slovenia (Ažman Momirski, 2014).

DATA AND METHODOLOGY

Selecting various methodologies was necessary for the purposes and aims of this research. First, when surveying local municipalities in Slovenia that contain terraced landscapes, we used LIDAR hillshade back-

Table 1: Data for selected municipalities and pilot areas.

Municipality – terraced area	Municipal area (km²)	Pilot area of the terraced landscape (km²)	Terraced landscape within the pilot area (km²)	Terraced landscape within the pilot area (%)
SEŽANA — MERČE	217.4	3.92	0.26	6.63
TOLMIN — RUT	382.33	10.17	0.36	3.54
TREBNJE — DEČJA VAS	163.31	3.06	0.51	16.67
VELIKE LAŠČE — VELIKA SLEVICA	103.18	1.14	0.27	23.68
ŽELEZNIKI — SMOLEVA	163.79	1.83	0.12	6.56
ŽIROVNICA — RODINE	42.58	1.81	0.24	13.26

ground data (LIDAR, 2015), the borders of the local municipalities in Slovenia, and land-use data (GERK, 2015). Changing the layer visibility by turning layers on (displayed in the plan, map, or image) or off (not displayed in the plan, map, or image) affects the data representation. Combining different layers provides flexibility, control, and the opportunity to identify information about specific features in the plan, map, or image. Using the method of changing layers made it possible to present the results below.

National documents under review were the Waters Act (ZV, 2002), the Construction Act (ZGO, 2004), the Nature Conservation Act (ZON, 2004), the Spatial Development Strategy of Slovenia (OdSPRS, 2004), the Environmental Protection Act (ZVO, 2006), the Agricultural Land Act (ZKZ, 2011), the Promotion of Balanced Regional Development Act (ZSRR-2, 2011), the Resolution on the Strategic Orientations of Development of the Slovenian Agriculture and Food Industry in 2020, "Zagotovimo. si food for tomorrow" (ReSURSKŽ, 2011), the 2012–2016 Slovenian Tourism Development Strategy (SRST, 2012), and the Strategic Plan on Implementing the Resolution on the Strategic Guidelines for Agricultural and Food Industry Development by 2020 (SURSKŽ, 2014).

The documents chosen at the local level were municipal spatial plans (OPN). The OPN is determined by the Spatial Planning Act (ZPNačrt, 2007) and defines the responsibilities of municipalities in spatial planning: determining the objectives and guidelines for spatial development of the municipality, determining the land use and conditions for the placement of spatial development, and planning spatial arrangements of local importance. The municipal spatial plan contains strategic and operative parts. The strategic part of the municipal plan defines the background, objectives, and concept of the spatial development of the municipality; guidelines for urban development and complete renovation; guidelines for developing the landscape, determining land use and spatial implementation conditions, and designing public infrastructure of local importance; settlement areas, including areas of dispersed construction, which are spatially connected; and scattered settlements. Implementing the municipal spatial plan for individual spatial planning units provides the area of land use, the spatial implementation conditions, and areas for which to prepare detailed municipal spatial plans. The municipal spatial plan is the basis for preparing projects for obtaining building permits under construction regulations.

The selection of municipal spatial plans reviewed was not random because the selected municipalities have pilot areas of great importance with regard to terraced landscapes, which were already analytically processed in previous studies:[1] Žirovnica–Rodine, Tolmin–Rut, Trebnje–Dečja Vas, Velike Lašče–Velika Slevica, Železniki–Smoleva, and Sežana–Merče (Table 1).

The selected terms examined in documents at both the national and local levels in the first step were *terrace*, *terraces*, *terraced landscape*, *terraced area*, and *terraced slope*. In the second step, the documents at the both national and local levels were reviewed for the terms *landscape*, *landscapes*, *landscape* (adj.), *cultural landscape*, and *agricultural landscape*.

The methodology followed to ensure that the research was up to date used the following process (Oliveira, 2015): downloading the latest version of the documents as PDF files from their original sources; using the command "find" in the Acrobat reader program; and scanning page after page to extract the section, paragraph, and sentence in which the terms are noted. Ten national documents and six local documents were scanned. This process made possible concise and direct analysis by involving not only the words identified but also their context. A summary of the findings is presented in the tables and descriptions.

The methodology for the proposal is based on different territorial levels. The first level covers the entire municipality. Following the Spatial Planning Act (ZPNačrt, 2007), spatial units are formed in the spatial plan of the municipality, covering the entire territory of the municipality. The spatial units must be set exactly, determining their boundaries on the ground and in the cadaster. Therefore, the second level, which is more detailed,

1 This research was partly funded by the Slovenian Research Agency through the applied research project "Terraced Landscapes in Slovenia as Cultural Values" (no. L6-4038), in which eight pilot areas were selected and examined.

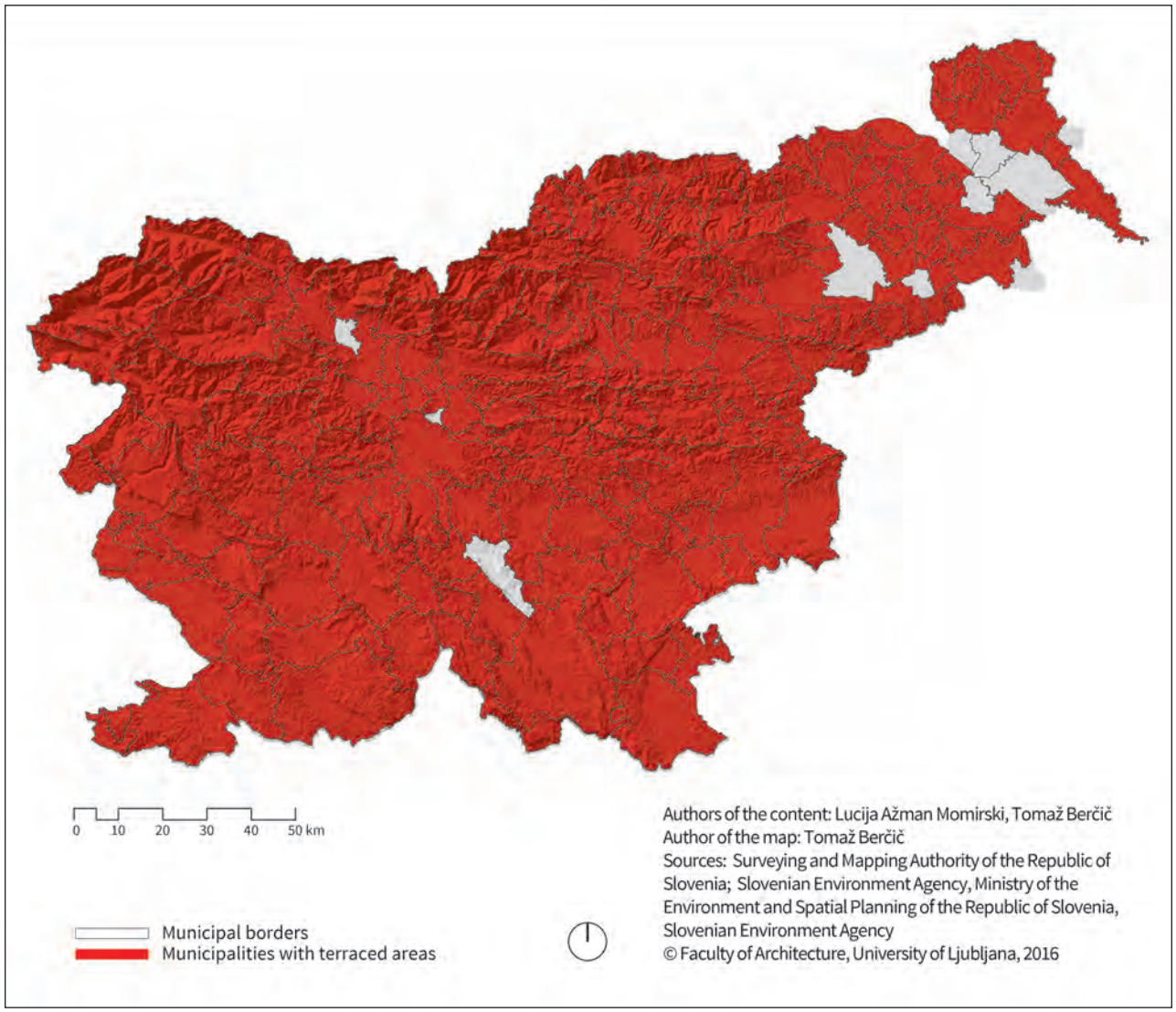

Figure 1: Local municipalities in Slovenia with terraced landscapes.

covers the cadastral unit or settlement. Finally, we highlighted features of terraced systems for a single plot.

RESULTS

Reviewing all Slovenian territory, we found only nineteen municipalities (out of all 211 municipalities) without terraced landscapes, which altogether accounts for 3.3% of the country's entire territory (Table 2). It is necessary, of course, to note that the presence of terraced landscapes in the municipalities is not uniform: in some municipalities, where the major part of the territory is flat, there may be only a few terraces on not very steep slopes at the edge of the municipal territory (borderline cases were included in the category of municipalities with terraced landscapes); in other municipalities, terraced landscapes may be the dominant landscape feature (Figure 1). Both active (i.e., cultivated) and abandoned terraces were considered in the review.

The review has also shown very interesting relief typologies, which can be observed through such analytical work. For example, terraces in high mountains just below the ridges mainly have wide terraced platforms with a strong gradient, irregular plan, and extremely low terraced slopes—however, because of the falling slope, these terraces have great heights. In contrast, terraces at the foot of the hills, which are often low, have medium-wide terraced platforms and an almost equal height of the terraced slope and terrace. There are also uniform, regular, higher terraces with only a few centimeters of gradient of the terraced slope, and therefore again an identical height of the terraced slope and terrace.

An analytical review of the national documents (Table 3) shows that first selected terms are mentioned only

Table 2: Local municipalities in Slovenia without terraced landscapes.

Municipalities without terraced areas	Municipal area (km²)	Percentage of Slovenian territory
BELTINCI	62.25	0.31
ČRENŠOVCI	33.69	0.17
DOBREPOLJE	103.15	0.51
HAJDINA	21.82	0.11
KIDRIČEVO	71.50	0.35
KOBILJE	19.74	0.10
KRIŽEVCI	46.25	0.23
MARKOVCI	29.84	0.15
MIKLAVŽ NA DRAVSKEM POLJU	12.54	0.06
MURSKA SOBOTA	64.43	0.32
NAKLO	28.29	0.14
ODRANCI	6.93	0.03
SREDIŠČE OB DRAVI	32.74	0.16
STARŠE	33.97	0.17
TIŠINA	38.82	0.19
TRZIN	8.62	0.04
TURNIŠČE	23.84	0.12
VELIKA POLANA	18.67	0.09
VERDEJ	12.02	0.06
Sum	**669.09**	**3.30**

in the Waters Act (ZV, 2002; *terraces* once), the Agricultural Land Act (ZKZ, 2011; *terraces* twice) and in the Strategic Plan on Implementing the Resolution on the Strategic Guidelines for Agricultural and Food Industry Development by 2020 (SURSKŽ, 2014; *terraces* three times and *terraced* area once).

The Waters Act (ZV, 2002) specifies that, in landslide areas where water phenomena and the geological composition of the soil pose a risk to the land or slope stability, owners of the land should not encroach on the land in such a way that this encroachment triggers the movement of hillsides or puts the stability of the land at risk in any other way. In such areas it is not permitted to construct terraces, which would retain the water.

The Agricultural Land Act (ZKZ, 2011) mentions terraces under the paragraph on improvement of agricultural land. "Improvement of agricultural land includes measures that improve the physical, chemical, and biological properties of the soil and improve access to agricultural land. Improvement of agricultural land includes leveling land, removing bushes and trees, landfills on fertile land, removing isolated rocks, creating field roads, creating and removing terraces, creating mountain and karst pastures, installing minor drainage, adding lime to the soil, and long-term fertilization." Terrace construction ranks among major land-improvement measures.

The Strategic Plan on Implementing the Resolution on the Strategic Guidelines for Agricultural and Food Industry Development by 2020 (ReSURSKŽ, 2011) defines terraces as land of ecological importance. The guidelines for achieving strategic and development objectives in viticulture and winemaking also specify agro-environmental and climate payments (KOPOP) in the second pillar under the Rural Development Program (2016) for terraced land, which is identified with preventing erosion, maintaining vineyards on steep slopes, reducing the impact of natural disasters, preserving cultivated farmland (preservation of cultivated areas up to 5,570

***Table 3: National documents scanned for the terms* terrace*,* terraces*,* terraced landscape*,* terraced areas*, and* terraced slope.**

	Keywords				
Documents	***terrace***	***terraces***	***terraced landscape***	***terraced areas***	***terraced slopes***
ZV (2002)	0	1	0	0	0
ZGO (2004)	0	0	0	0	0
ZON (2004)	0	0	0	0	0
SPRS (2004)	0	0	0	0	0
ZVO (2006)	0	0	0	0	0
ZKZ (2011)	0	2	0	0	0
ZSRR-2 (2011)	0	0	0	0	0
ReSURSKŽ (2011)	0	0	0	0	0
SRST (2012)	0	0	0	0	0
SURSKŽ (2014)	0	3	0	1	0

***Table 4: Local municipal documents scanned for the terms* terrace, terraces, terraced landscape, terraced areas, *and* terraced slope.**

	Keywords				
Documents	***terrace***	***terraces***	***terraced landscape***	***terraced areas***	***terraced slopes***
OPN ŽIROVNICA (2011)	0	2	0	0	0
OPN TOLMIN (2012)	0	2	0	0	0
OPN TREBNJE (2013)	0	1	0	0	0
OPN VELIKE LAŠČE (2013)	0	1	0	1	2
OPN ŽELEZNIKI (2013)	0	2	0	0	0
OPN SEŽANA (2016)	0	1	0	0	0

ha of terraced land and 13,600 ha of land covered with grass), and maintaining the typical landscape and biodiversity (preservation of vineyards on steep terrain up to 3,500 hectares). Terraces are also mentioned in connection with growing olives; unfavorable land conditions challenge olive cultivation in Slovenia, and terraces aid adaptation to particular climate conditions (olive cultivation in Slovenia occurs in the most northerly regions where olives are cultivated, resulting in frequent frost). The land structure for olive cultivation, with terrace construction, creates high investment costs; however, the area planted with olives continues to increase. Olive groves on terraces are also recommended as a measure for dealing with overgrown areas.

An analytical review of the selected municipal documents (Table 4) shows that three keywords are never mentioned in the local municipal documents: *terrace*, *terraced landscape*, and *terraced areas*. The phrase *terraced slope* is mentioned in only one local municipal document. In the document for the Municipality of Tolmin, these phrases do not occur at all; nothing is mentioned connected with terraced landscapes. In the other documents, the noun *terraces* is mentioned once (in two cases), twice (in two cases), or three times (in one case).

The Waters Act (ZV, 2002), the Promotion of Balanced Regional Development Act (ZSRR-2, 2011), and the 2012–2016 Slovenian Tourism Development Strategy (SRST, 2012) do not involve the selected keywords (Table 5). In the Nature Conservation Act (ZON, 2004) and in the Environmental Protection Act (ZVO, 2006) the term *landscape* is used in the context of environmental impact assessment. In the Agricultural Land Act (ZKZ, 2011) the word *landscape* is mentioned among the general provisions: "The objectives of this Act are . . . the upkeep of the landscape." Article 6 of the Construction Act (ZGO, 2004) defines that maintenance of the facility could be carried out without a building permit if

***Table 5: National documents scanned for the terms* landscape, landscapes, landscape *(adj.)*, cultural landscape, *and* agricultural landscape.**

	Keywords				
Documents	***landscape***	***landscapes***	***landscape (adj.)***	***cultural landscape***	***agricultural landscape***
ZV (2002)	0	0	0	0	0
ZGO (2004)	1	0	40	0	0
ZON (2004)	2	0	0	0	0
SPRS (2004)	83	11	63	31	5
ZVO (2006)	2	0	0	0	0
ZKZ (2011)	1	0	0	0	0
ZSRR-2 (2011)	0	0	0	0	0
ReSURSKŽ (2011)	0	0	0	8	0
SRST (2012)	0	0	0	0	0
SURSKŽ (2014)	7	1	5	25	1

the object has such shortcomings that they have a very poor effect on the external appearance of the landscape. The municipality can commit the owner to carry out required maintenance work, which should not be dangerous construction, in order to protect public interests. The Resolution on the Strategic Orientations of Development of the Slovenian Agriculture and Food Industry in 2020, "Zagotovimo.si Food for Tomorrow" (ReSURSKŽ, 2011) refers to the term *cultural landscape* in eight different contexts. It states that agriculture has an important impact on the cultural landscape and its aesthetic and natural values. Protecting the typical cultural landscape is a clear reason for defining a new agricultural policy. Economic development in rural areas is an important factor that contributes to strengthening the cultural landscape. The vision of agriculture also encompasses the cultural landscape, which is well organized. The concept of sustainable agricultural development with defined strategic objectives will be implemented by attaining the priority program guidelines in particular, one of which is the preservation of cultural landscapes. Strengthening the preservation of the cultural landscape is mentioned twice: among the principles and mechanisms of action and among the application and implementation of the resolution. The resolution's operational objectives define, among others, the preservation of typical cultural landscape elements. The Strategic Plan on Implementing the Resolution on the Strategic Guidelines for Agricultural and Food Industry Development by 2020 (SURSKŽ, 2014) focuses on and draws attention to the landscape diversity of Slovenia, to the orderly cultural landscape and special features of the cultural landscape, to the distinctive image and identity of the cultural landscape (i.e., vineyards and olive groves), and to the preservation and maintenance of the cultural landscape. Slovenia's Spatial Development Strategy (SPRS, 2004) is the ordinance that most defines the term *landscape* among all government documents. This is not a surprise, because Slovenian territory is well-known in terms of cultural and symbolic landscape significance. A reform of the Spatial Development Strategy of Slovenia will be prepared and the new strategic document will be adopted by the end of 2017. SPRS defines different types of landscapes, such as the outstanding cultural landscape, and states the development of the landscape (also as a cultural landscape and as an [intensive] agricultural production landscape). Traditional agricultural areas should continue to develop as cultural landscapes. The strategy defines the landscapes of national importance by pointing out 68 landscape areas, comprising areas where a terraced landscape is dominant (although the strategy does not state this) and have a high experience value, mainly due to geometrized terraced landscape.

An analytical review of the selected municipal documents (Table 6) shows that the keywords *landscape, landscapes, landscape (adj.), cultural landscape, and agricultural landscape* are always used in the local municipal documents (except the plural of the noun *landscape*). The term agricultural landscape is rarely mentioned in the documents scanned. In OPN Sežana (2013) cultural landscape is often written in the context of the outstanding landscape of Lipica. OPN Trebnje (2013) describes similar references to the cultural landscape such as those defined in national documents: to preserve the quality and identity of the landscape, to identify values and landscape diversity. OPN Velike Lašče (2013) adds to these observations the untapped touristic and recreational potential of the cultural landscape and an important mix of built structures and landscape. The Velika Slavica pilot area is specifically mentioned as a varied and very attractive cultural landscape: it combines extensive orchards, fields, gardens, and meadows on the terraced area below the village. OPN Železniki (2013) implements the specific interventions in the landscape in more detail and also mentions the archaeological landscape. The Smoleva pilot area is listed in a group of areas that are primarily characterized by settlement pattern. Areas of outstanding landscapes are highlighted in the OPN Sežana (2016). In its document the karst cultural landscape is defined by the typical landscape patterns and interweaving of the landscape with the settlements. In Žirovnica the intervention of transport infrastructure

***Table 6: Local municipal documents scanned for the terms* landscape, landscapes, landscape (adj.), cultural landscape, agricultural landscape.**

	Keywords				
Documents	***landscape***	***landscapes***	***landscape (adj.)***	***cultural landscape***	***agricultural landscape***
OPN ŽIROVNICA (2011)	23	0	17	9	4
OPN TOLMIN (2012)	78	7	54	13	1
OPN TREBNJE (2013)	4	0	9	9	1
OPN VELIKE LAŠČE (2013)	13	0	10	5	1
OPN ŽELEZNIKI (2013)	30	0	18	16	1
OPN SEŽANA (2016)	70	6	63	16	2

has to be carried out in such a way as to maintain landscape elements. The landscape structure should also be maintained. In Tolmin it is possible to find specific landscape patterns, such as alpine pastures. The landscape has also ecological significance. OPN Tolmin (2012) is prepared very precisely and also provides landscape units on the territory of the municipality. The landscape of the Rut pilot area received a national recognition in

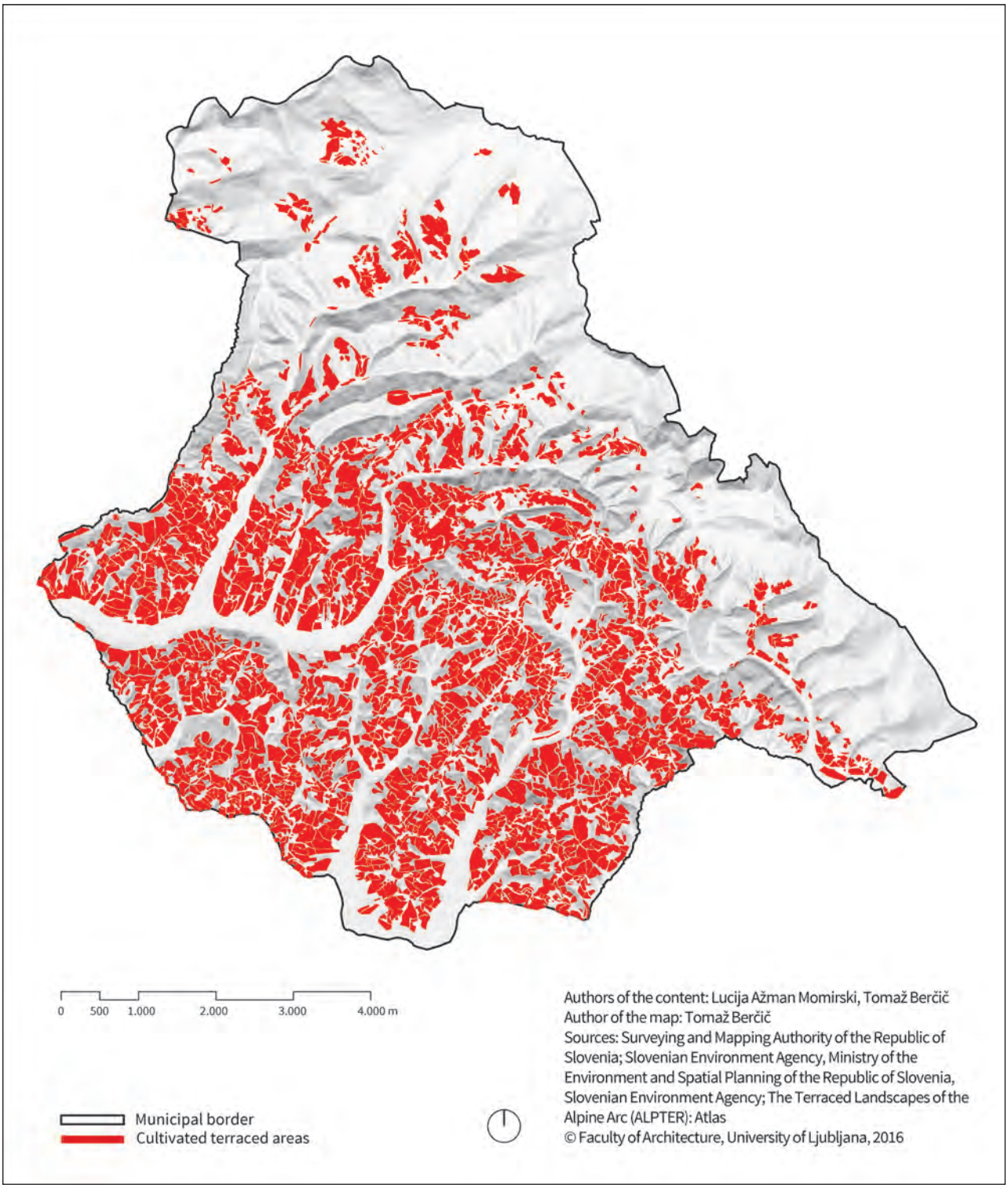

Figure 2: Updated plan of terraced landscapes (The Municipality of Brda).

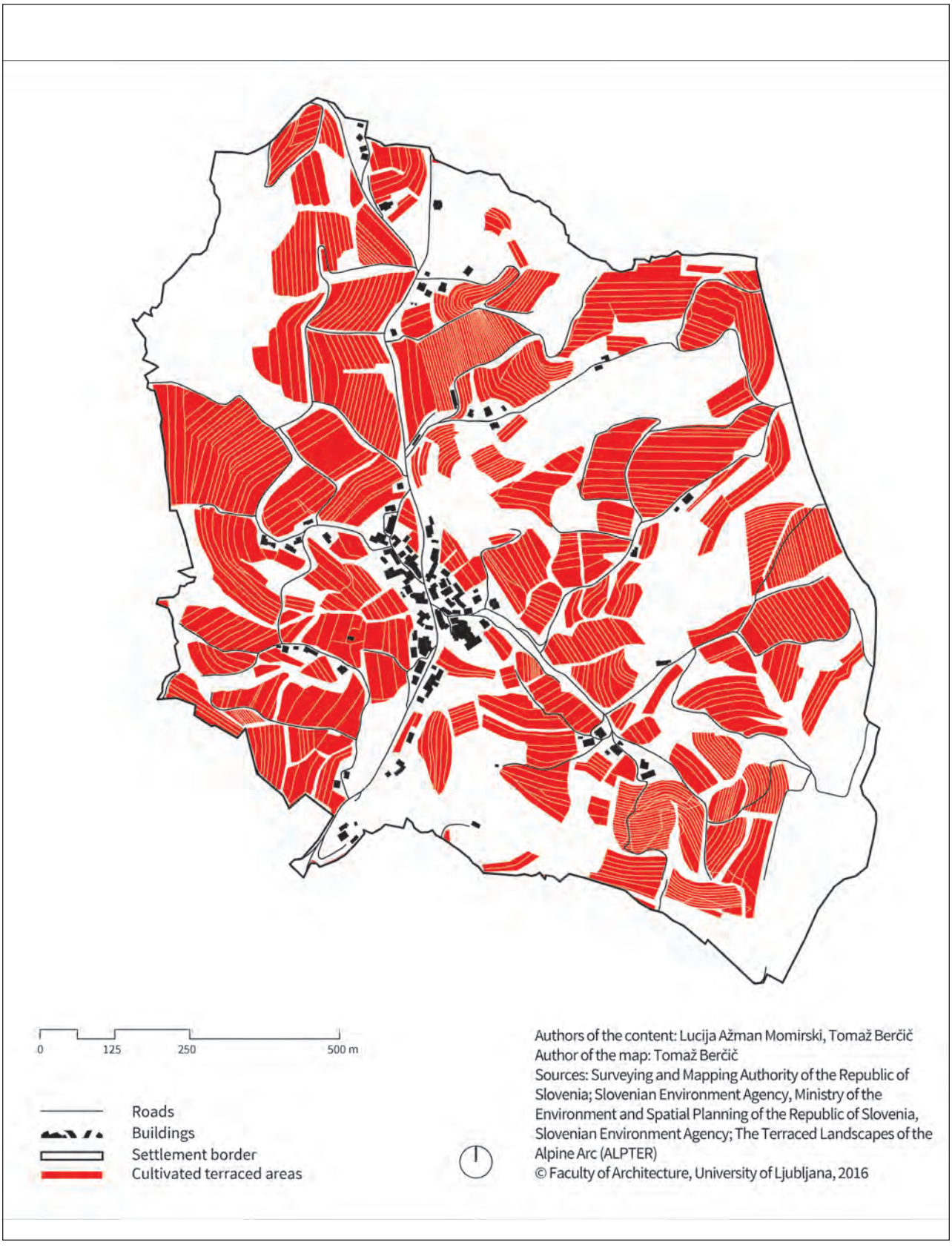

Figure 3: Updated terraced landscape plan in the settlement Medana (Municipality of Brda).

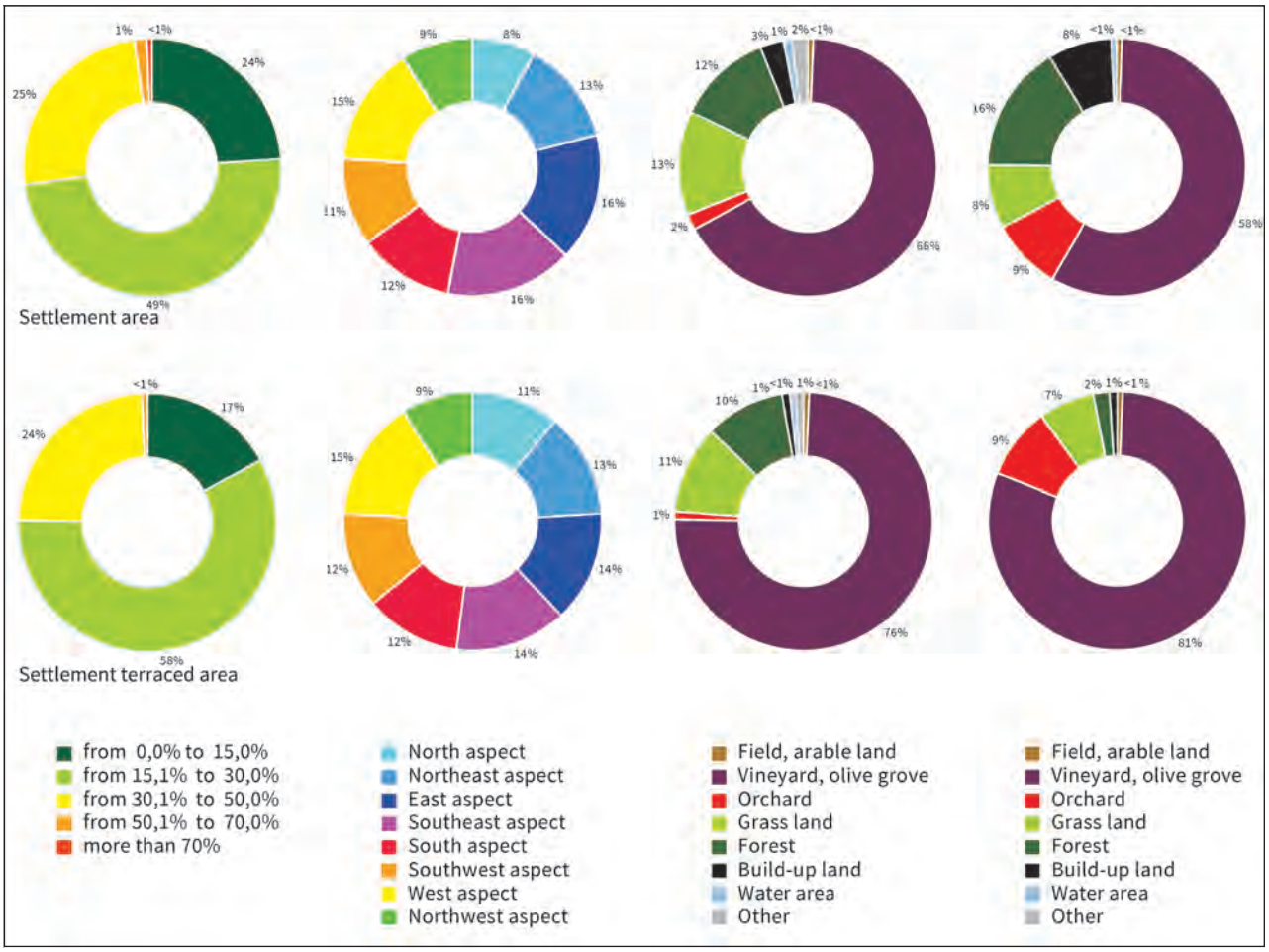

Figure 4: Data on terrain slope, terrain aspect, and land use according to the Franciscan Cadaster (1812) and contemporary land use in the cadastral unit of Medana. Sources: Surveying and Mapping Authority of the Republic of Slovenia, Trieste State Archives, Ministry of Agriculture and the Environment of the Republic of Slovenia.

SPRS, but a greater focus on protecting the village as protecting surrounding landscape is applied in the municipal document.

DISCUSSION

Selected documents can be divided into spatial and sectorial texts. Sectorial legislation covers only a small portion of landscape topics, but it does contain the essential part about terraced landscapes. On the other hand, the Spatial Development Strategy of Slovenia (OdSPRS, 2004) provides suitable, but very general guidelines, which are often vague and with no requirements of how to deal with landscape at the local level. Terraced landscapes are hidden within the term *cultural landscape* and are undeniably considered as part of the cultural landscape; certain statements also apply to terraced regions. In addition, parts of the strategy are obsolete due to changes in data, new strategic global and European orientations, and so on.

Figure 5: Updated terraced landscape land-use plan in the settlement Kožbana (Municipality of Brda).

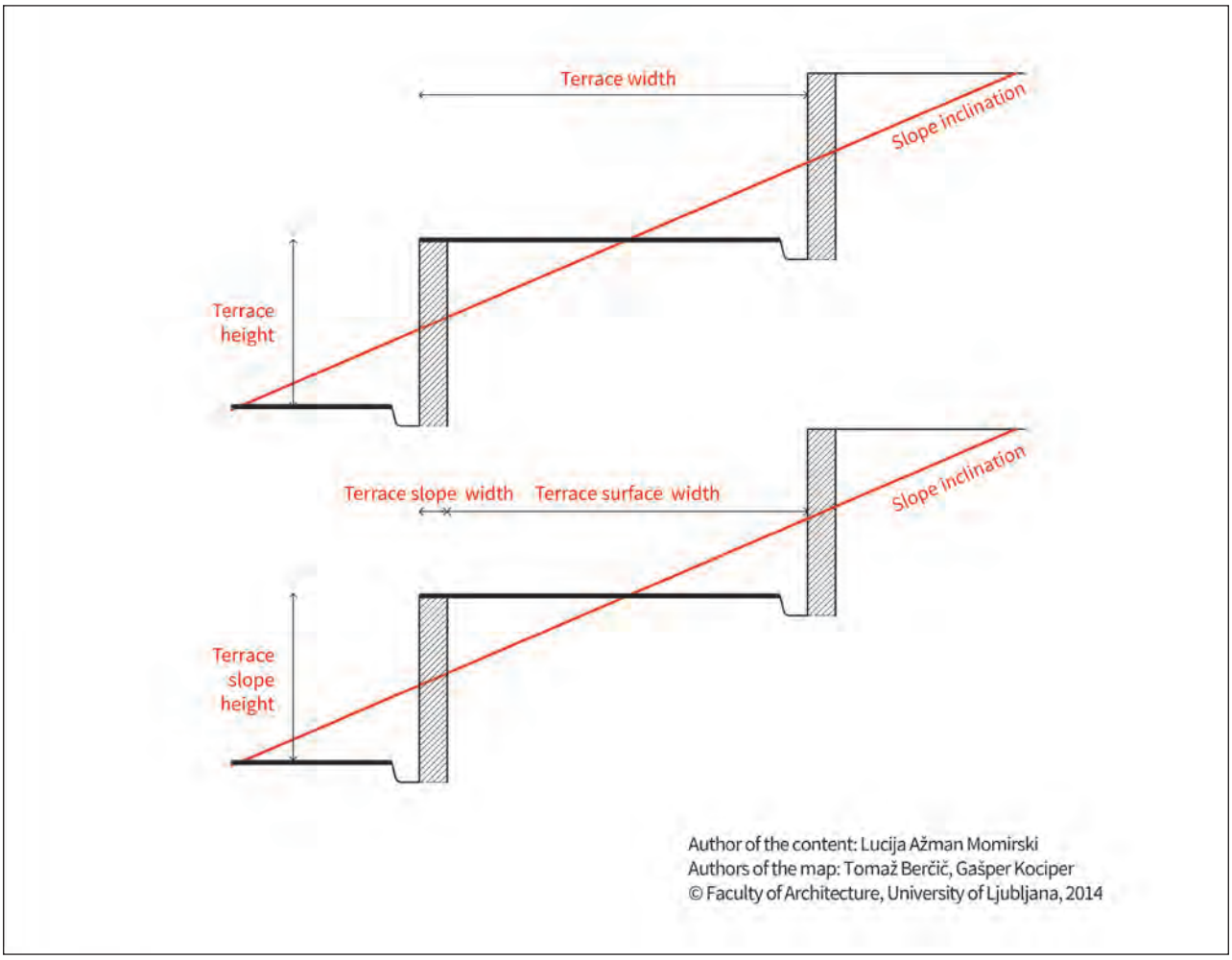

Figure 6: Cross-section of individual terrace in the Koper Hills.

Planners at the municipal level usually rely only on general descriptions of national documents and they do not develop their own identifications of landscape features, particularly describing the state of the area. This means that the assessment of the landscape rarely goes into details of the typical landscape elements. But when the description of the current situation is done, the assessment is lacking, meaning that in OPNs there is a very different way to treat landscape. The extent and quality of the landscape treatment in OPNs depends on the planner's expertise. Elaboration of the professional guidelines is at the mercy of local municipalities, which usually follow the rule: that which is not required is often not implemented.

National documents mainly specify general guidelines, so it is necessary to emphasize that more accurate data are needed at the operational level in order to define landscape diversity and other landscape issues. Some of the data (e.g., exceptional landscape elements) have not been formally acknowledged in the professional community, and this represents an obstacle in addressing cultural landscapes. Similarly, the fact that terraced landscapes are built, constructed landscapes (Ažman Momirski et al., 2007; Ažman Momirski, Kladnik, 2008, 2009, 2015) and that precise rules and methods for their construction exist today, has not been made evident. No national or municipal document mentions the search phrase *terraced landscape*. Moreover, the richness and multiple intertwined layers of terraced regions can only be comprehended through an interdisciplinary approach in research and professional elaboration.

Surprisingly, global and international trends and Slovenian research have not induced Slovenian documents to involve themes specific to terraced landscapes. We are convinced that Slovenian terraced landscapes have too many meaningful values to remain ignored, so we propose a procedure that would enable institutions at the national and local levels to acknowledge their importance.

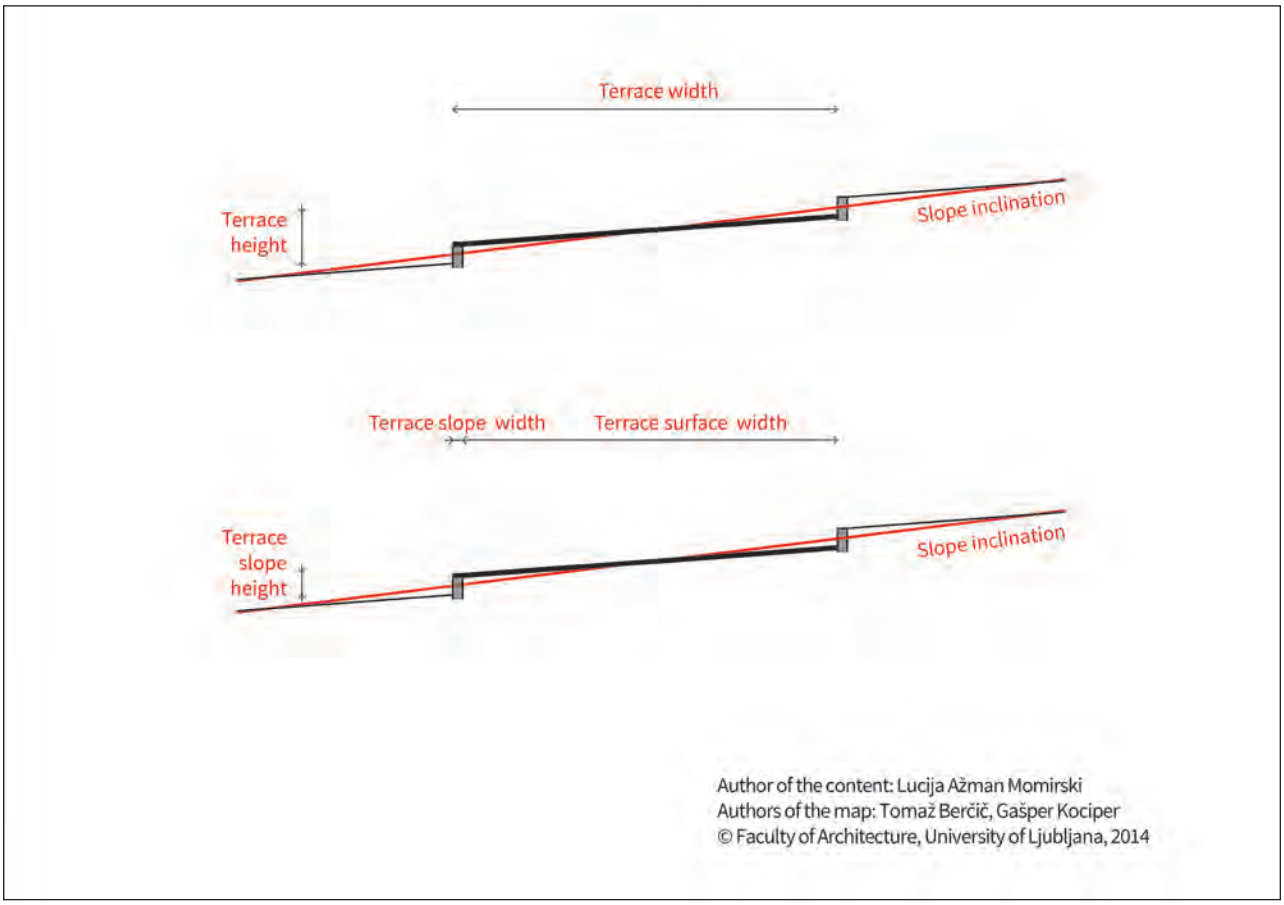

Figure 7: Cross-section of individual terrace in the Karst cultural landscape.

One step towards building greater awareness of terraced landscapes is an elaboration of the inventory of the terraced areas following the methodology of different territorial levels. At the level of the entire municipality, which is the first level, is important to recognize all terraced area. With the use of modern planning methods additional data layers, such as orientation, slope, land use, and other details useful for further evaluation, could be investigated. The most useful conclusions at this level are the extent of the area (ha) and comparisons with other data gathered in the process of elaborating spatial, strategic, and implementing acts. If an inventory of a given terraced landscape has already been made, updated plans can show the increase or decrease of the phenomenon (Figure 2).

The second level covers the cadastral unit or settlement. Here the inventory should be more detailed, showing not only terraced areas, but also single terraces that contribute to the terraced landscape. Similar to the previous level, the most useful information is the extent of the area (ha), which can be updated to show the increase or decrease of the phenomenon (Figure 3). In the case of dry walls, vineyards, and orchards, the lengths of the terraced slopes are measured because of the dry wall reconstruction and for the calculation of grapevines or fruit trees. Additional data such as orientation, slope, land use, and so on are also useful (Figure 4, Figure 5). It is reasonable to prepare various cross-sections of individual terraces of the area because the typology of terraced slopes and terraced platforms can change even within the same settlement (Figure 6, Figure 7, and Figure 8).

Finally, we highlighted features of terraced systems for a single plot. Two additional documents influence the elaboration of the plans at this level. Regulation on the types of buildings depending on their complexity (complex, less complex, and simple structures; Uredba, 2013) determines that terraces can be built without a building permit, if their height does not exceed 1.5 m. The Agricultural Land Act (ZKZ, 2011), which ranks terrace construction among major land-improvement measures, requires investors to prepare a plan for this land-improvement measure. Data important for the assessment of a plot plan include the area of the terrace platform, the plan (projection) area of the terraced slopes, and the area of the paths. More important than the height of the terraces is the height of the terrace

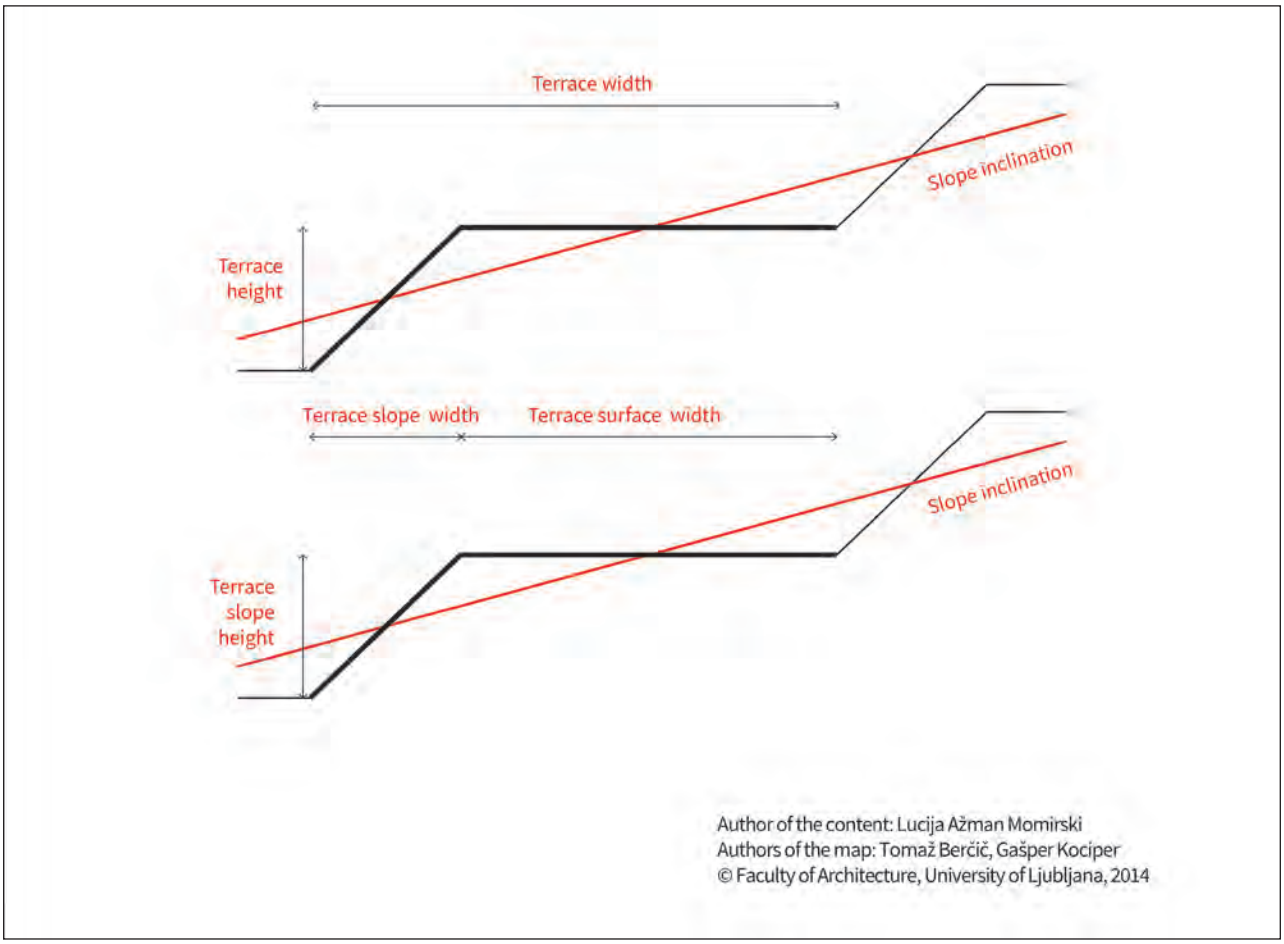

Figure 8: Cross-section of individual terrace in the Brkini Hills.

slope: combining it with the length of the terrace platform, it is easy to calculate the costs for the dry wall reconstruction. Again, in the case of dry walls, vineyards, and orchards the length of the terraced slopes is measured because of the calculation of dry wall reconstruction and for the calculation of grapevines or fruit trees (Figure 9).

CONCLUSION

It is important to record and understand terraced landscapes. If its real characteristics are clearly known, it will be easier to add values and a future to this land. However, Slovenian spatial planning has not recognized terraced regions as a landscape system *sui generis*. Therefore, terraced landscapes cannot be called a landscape of abandonment (Varotto, 2014), but better a landscape of ignorance. Following the European landscape conventions, this study appeals to national and local public authorities to adopt policies and measures at the local, regional, national, and international levels for protecting, managing, and planning terraced landscapes. In some regions in Slovenia terraced landscapes are increasing: an updated plan of terraced landscapes in Goriška Brda shows that the terraced area has grown in the last ten years by almost 100 ha. This finding alone is enough reason to encourage a more in-depth engagement with terraced regions.

Implementation at various levels of terraced landscape should be based on cross-sectorial and cross-academics collaboration, which is hardly easy, although it is necessary and desirable. Collaboration means linking and sharing information, resources and activities to achieve jointly an outcome. Implementation also demands a shift or additional push from the administrative legalities to establishing capacities for physical practicalities. A detailed review of the renewal of vineyards reveals that a major impact on arrangement of terraced vineyards had government incentives, i.e. subsidies for such works. Implementation of the described methodology could be achieved also by establishing and implementing a wider interdisciplinary set of policies and actions through Rural Development Programme. Applying bottom-up approach, in which base elements (terraces)

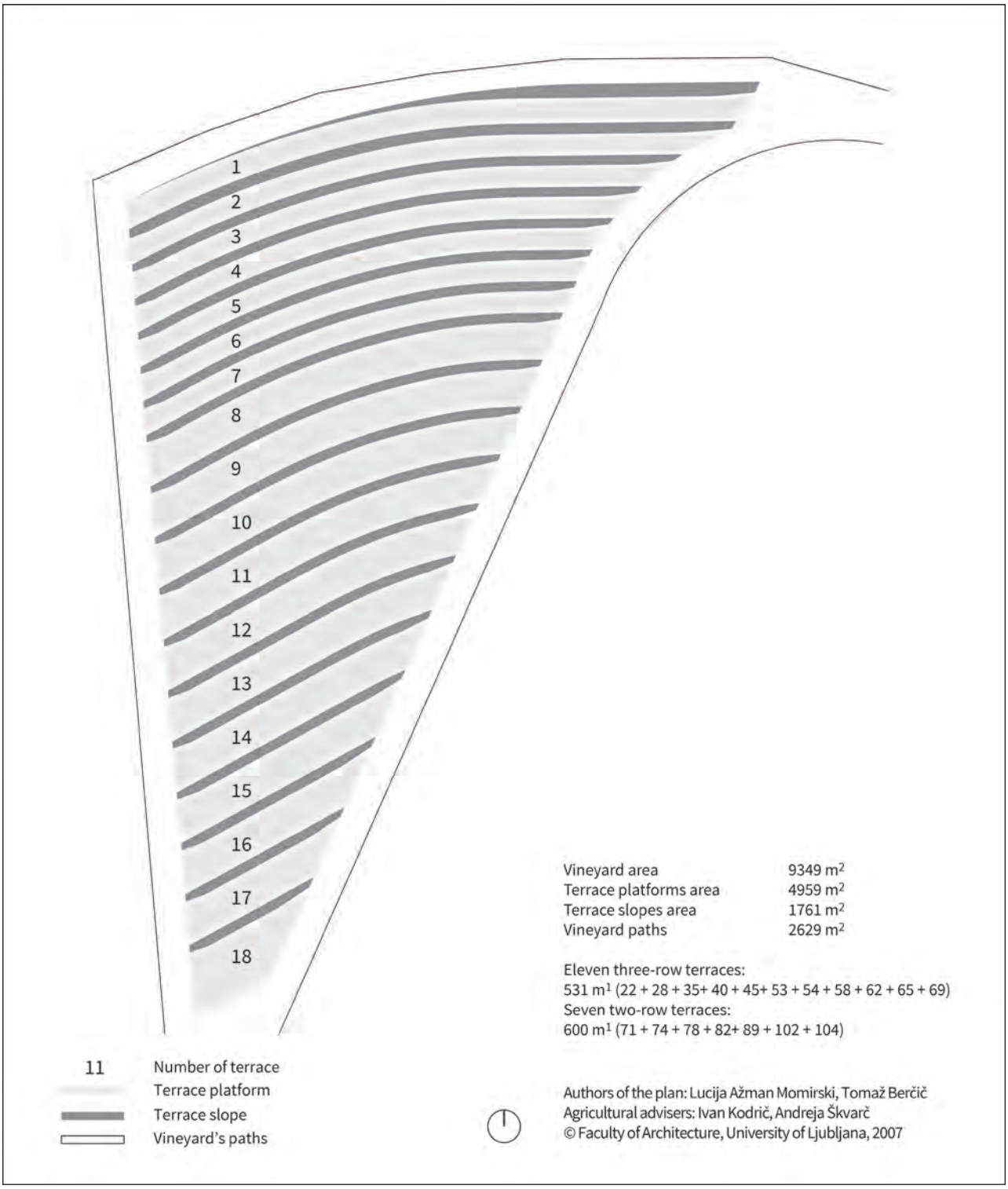

Figure 9: Scheme of the terraced plot in Medana (Municipality of Brda).

Figure 10: Terraced landscape in Višnjevik (The Municipality of Brda).

are specified in detail and then linked together, forming in steps larger systems (terraced landscapes), would be precise and useful. On the opposite, the approach which starts with big picture, as is the case today, will fail as it is not detailed enough to realistically validate terraced areas.

PREZRTA OBMOČJA: SLOVENSKE TERASIRANE POKRAJINE

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POVZETEK

Prispevek v uvodu predstavlja pregled raziskovalnih projektov terasirane pokrajine na svetovni, evropski in slovenski ravni. Objavljene študije naraščajo v svetu, v evropskem in državnem akademskem prostoru. Različne civilne iniciative si prizadevajo za prepoznavanje, zaščito in ohranitev terasirane pokrajine. Na seznam svetovne kulturne dediščine je uvrščenih nekaj izjemnih terasiranih krajin. V sodobnosti so bili oblikovani pomembni dokumenti, kot sta Honghe deklaracija za terasirano pokrajino in Evropska krajinska konvencija za kulturno krajino. V raziskavi smo ugotovili, da tako na državni in lokalni ravni v dokumentih ni uporabljenega pojma terasirana pokrajina, v nacionalnih dokumentih pa tudi nismo našli pojmov terasa in terasirano pobočje. Ugotovitev je presenetljiva, saj lahko terasirano pokrajino zaznamo kar v stotriindevetdesetih občinah v Sloveniji. Svetovni in mednarodni trendi, pa tudi opravljene slovenske raziskave niso vplivale na slovenske strateške, zakonodajne in prostorske dokumente, da bi slednji v svoje tekste vključili specifične pojme povezane s terasirano pokrajino. Ker smo prepričani, da so terasirane pokrajine pomembna prostorska prvina, ki ima posebne lastnosti, predlagamo postopek, ki ga lahko državne in lokalne ustanove uporabijo, ko se soočajo s pojavom terasirane pokrajine. Izvajanje postopka mora temeljiti na medsektorskem sodelovanju in uporabi pristopa od spodaj navzgor.

Ključne besede: terasirana pokrajina, državni strateški dokumenti, prostorsko načrtovanje, občinski prostorski načrt, Slovenija

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